Final report

OWMC
Ontario
Waste Management
Corporation

A provincial crown corporation

Gartner
Lee
Associates
Limited

Museum of
Indian Archaeology (London)

SITE SELECTION PROCESS

PHASE 4A: SELECTION OF A PREFERRED SITE(S)

ARCHAEOLOGY

A REPORT PREPARED FOR

ONTARIO WASTE MANAGEMENT CORPORATION

BY

MUSEUM OF INDIAN ARCHAEOLOGY (LONDON)

NOVEMBER, 1985

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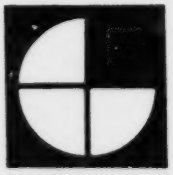

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November 13, 1985

Dr. B.D. Mitchell,
Director of Corporate Planning
and Development,
Ontario Waste Management Corporation,
2 Bloor Street West,
11th Floor,
Toronto, Ontario.
M4W 3E2

Attention: Mr. J.G. Micak,
Manager, Environmental Projects

Dear Dr. Mitchell:

Re: Final Report, Site Selection Process Phase 4A:
Selection of a Preferred Site(s) - Archaeology

We are pleased to forward the final edition of the Phase 4A Archaeology report prepared on our behalf by the Museum of Archaeology (London).

The report documents native archaeological sites and non-standing historic Euro-Canadian sites on the eight candidate sites evaluated during Phase 4A. As well, it describes the comparative evaluation of the final six siting options based on these data.

We and our colleagues at the Museum of Indian Archaeology thank you for this opportunity to be of service and trust that the report fulfills your requirements.

Yours very truly,

GARTNER LEE ASSOCIATES LIMITED

D S Donald

for E.G. Anderson, P.Eng.
Project Director

DSO:jw
attach.

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F-5	LF-3C	AgGv-2	F-24	LF-3C	AgGv-39
F-6	LF-3C	AgGv-3	F-25	LF-3C	AgGv-41
F-7	LF-3C	AgGv-5	F-26	LF-3C	AgGv-42
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F-9	LF-3C	AgGv-11	F-28	LF-9C	AgGu-28
F-10	LF-3C	AgGv-15	F-29	LF-1E	AgGs-9 and 10
F-11	LF-3C	AgGv-16	F-30	LF-1E	AgGs-29
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ARCHAEOLOGY STUDY TEAM

The archaeological study was carried out by the Museum of Indian Archaeology, An Affiliate of The University of Western Ontario, London, as an independant subconsultant with Gartner Lee Associates Ltd., Markham.

Liaison personnel with Gartner Lee Associates included Mr. David Osmond (Associate), Mr. Jim Furlong (Operations Manager), and Mr. Mike Slaven (Graphics).

Museum of Indian Archaeology personnel for the OWMC Phase 4A study were as follows:

William D. Finlayson, Ph.D. Executive Director and Consulting Archaeologist	-Consultation and Report Review
Robert J. Pearce, Ph.D Project Archaeologist	-Project Manager -Supervisor of Data Collection and Analysis -Site Selection Team Consultant -Report Writing
Peter A. Timmins, M.A. Assistant Project Archaeologist	-Assistant Supervisor of Data Collection
Karen M. Niece, B.A. Assistant	-Data Collection and Analysis -Graphics and Field Photography
Joni Catsburg, B.A. Assistant	-Data Processing and Analysis
Mark Borland, B.A. Wayne Hagarty, B.A. Assistants	-Data Collection and Processing

Stephen Harding -Lab Photography
Photographer

As noted in Section 3.2.2, the Museum of Indian Archaeology also served as archaeological subconsultant with Walker, Wright, Young Associaties (Toronto) for the comparative analysis of six potential municipal landfill sites in Halton Region (Museum of Indian Archaeology 1985, Environmental Assessment of the Landfill Component of the Region of Halton's Solid Waste Management System, Phase 2, Stage 2C: Archaeology). Halton Region's potential landfill sites D and E overlapped with OWMC candidate sites PI-1N and LF-4N respectively. Archaeological survey of Halton sites D and E took place prior to archaeological fieldwork on candidate sites PI-1N and LF-4N for OWMC, and the results of the work conducted on behalf of Halton Region were utilized in OWMC's Phase 4A.

Museum personnel who worked on the Halton study were as follows:

Peter A. Timmins, M.A. -Supervisor of Data Collection and Analysis
Assistant Project Archaeologist -Report Writing

James Esler, B.A. -Data Collection
Assistant

EXECUTIVE SUMMARY

PURPOSE OF THE REPORT

This report was undertaken on behalf of the Ontario Waste Management Corporation. It provides data on archaeological sites identified by the Museum of Indian Archaeology during Phase 4A: The Detailed Comparative Evaluation of Candidate Sites. This report also presents a comparative evaluation of the final six siting options considered in Phase 4A based on these data.

Archaeological resources documented by the Museum in Phase 4A included native archaeological sites and non-standing historic Euro-Canadian sites (pre A.D.-1876-1878). Standing heritage features are documented by another subconsultant: Historica Research Limited.

SCOPE AND METHODS

The Museum of Indian Archaeology's scope of work for Phase 4A was to document archaeological resources on and in the vicinity of the eight candidate sites.

Documentation of archaeological resources in Phase 4A provided knowledge on the prehistory and history of each candidate site and candidate site vicinity and led to the identification of significant archaeological resources which might be impacted on the candidate site if that candidate site were to be selected as the preferred location for OWMC's proposed facilities. Archaeological data were used to assist in the refinement of candidate site boundaries and contributed to the comparative evaluation of siting options.

Archaeological resources were documented in Phase 4A through a combination of three sources of information: archival research, on-site field survey, and public input.

Archival research involved an examination of "archaeological site record forms" and archaeological licence reports on file with the Heritage Branch, Ministry of Citizenship and Culture, and an examination of historical atlases and other published historical documents pertaining to the early Euro-Canadian history of the area (i.e., township/county) of each of the candidate sites (see Section 3.2.1).

On-site field survey was limited to those areas on the candidate site that had the ground surface exposed, namely ploughed fields and fields planted in open crop cover such as corn, young beans, and young wheat (i.e., where the ground surface remained visible between crop rows) (see Section 3.2.2).

The Museum also formulated a series of questions which were included on questionnaires circulated by the site selection team to all landowners and residents on and in the vicinity of each candidate site (Appendix A). These questionnaires included questions asking if the landowner had, or knew of anyone who had, items of historical or cultural interest from the property they owned (or rented). The Museum of Indian Archaeology attempted to contact all landowners who responded to these questions, to obtain additional details on the cultural material they had collected. If possible this material was documented and photographed. The Museum also attempted to contact all landowners who owned property that could be surveyed on each of the eight candidate sites, to obtain their permission to walk on their property; this provided an opportunity to ask if they had, or knew of anyone who had, items of historical or cultural interest (see Section 3.2.3). The Museum also participated in certain meetings held between members of the site selection team and local citizens groups during which information on archaeological resources was documented. A summary of this interview data is presented in Appendix B.

PREMISES AND POSTULATES

The following premises and postulates guided the data collection during Phase 4A:

- archaeological resources constitute part of the cultural environment and require study under the Environmental Assessment Act;

- data was collected on archaeological resources (native archaeological sites and non-standing, pre-A.D. 1876-1878 historic sites) both on the candidate site and in the vicinity of the candidate site through archival research, questionnaires, and interviews, but

- except as noted in Section 3.2.2, no field survey was conducted on properties in the candidate site vicinity. Given the scope of work and objectives of Phase 4A, it was necessary to carry out field survey on each candidate site but it was not appropriate to conduct field surveys in the candidate site vicinity;

- given the objectives of Phase 4A, it was not feasible to carry out a thorough archaeological survey of 100% of the land on each candidate site. Rather, an acceptable archaeological investigation strategy was adopted whereby only those lands with the ground surface exposed (ploughed fields or fields planted in open crop) were surveyed;

- it was assumed that any significant archaeological resources discovered on the preferred siting option would be further investigated during subsequent studies;

- it was assumed that any significant archaeological resources discovered on the preferred siting option would be mitigated if it was discovered that they would be impacted by proposed OWMC facilities.

STATUS OF DATA

This report presents a description of the archaeological resources documented in Phase 4A on and in the vicinity of each candidate site, and lists those archaeological resources on each candidate site that are considered at this time to be significant (Sections 4.2 to 4.9). These data are condensed and summarized in Section 4.10.

The limitations of the data are that on-field surveys were confined to areas on the candidate site that had the ground surface exposed at the time of the fieldwork. This availability ranged from 15% of the surface area of LF-9C to 67% of the surface area of LF-2N (Table 3). This means that large areas of certain candidate sites remain unsurveyed and that the number and nature of archaeological resources which might be present in those unsurveyed areas remains unknown. This approach was consistent with the archaeological investigation of other parcels of land for separate projects undertaken by the Museum and other archaeological consultants. This approach was considered to be adequate for comparative purposes.

The location of and data on archaeological sites are confidential, based on guidelines of the Ministry of Citizenship and Culture in the interest of heritage conservation (Appendix H). The published copies of this report therefore omit specific locational data for any of the archaeological sites on and in the vicinity of each candidate site. These data include the archaeological site name, which is often the name of the landowner, and site location listing county, township, lot, concession, and military grid reference. These locational data are contained in only three copies of the Museum's report, filed with the Archaeology Unit, Heritage Branch, Ministry of Citizenship and Culture (2 copies at 77 Bloor Street West, 2nd Floor, Toronto, Ontario, M7A 2R9 and 1 copy at 55 Centre Street, London, Ontario, N6J 1T4). In all other respects, the two versions of this report are identical.

MAIN FINDINGS

The main findings of the documentation of archaeological resources in Phase 4A are summarized in Table 3. This table deals only with archaeological resources documented on the eight candidate sites, not with archaeological resources in the candidate site vicinity. It indicates that a total of 90 native archaeological sites were documented, of which 25 are considered to be significant, and that a total of 36 non-standing historic Euro-Canadian sites were documented, of which 11 are considered to be significant.

The total number of native archaeological and non-standing historical sites documented have a variable distribution on the eight candidate sites, such that some candidate sites have no known significant archaeological resources (i.e., LF-4N) while other candidate sites have a relatively high number of known significant archaeological resources (i.e., LF-3C). The number and kind of significant archaeological resources present were used to assist in the refinement of the boundaries of certain candidate sites (Section 6.0) and to rank the six siting options relative to each other (see Conclusions and Recommendations below and Section 7.0).

A large number of significant archaeological sites discovered on candidate site LF-3C were spatially clustered in one area, namely within 200 metres on both sides of Beaver Creek. During Phase 4A, the Museum recommended that this zone of 200 metres on both sides of Beaver Creek be completely avoided by any and all facilities, to prevent impact on both known and as yet undiscovered archaeological sites within this zone. This recommendation was accepted by the site selection team. The constraint mapping in terms of archaeological sites was combined with the constraint mapping of other factors and indicators by other consultants and led to a refinement of the site boundaries for LF-3C (see Section 6.3).

CONCLUSIONS AND RECOMMENDATIONS

The comparative evaluation of siting options (Section 7.0), based on refined site boundaries for certain candidate sites (Section 6.0), revealed that among the siting options considered, the number of known significant archaeological resources that may potentially be impacted ranged from one to three.

The locations of significant archaeological and non-standing historic sites on the eight candidate sites have been revealed to the site selection team and to OWMC for planning purposes. Options for facilities development on each candidate site should attempt to avoid these locations if possible. If avoidance is not possible, it is recommended that these significant archaeological resources should be mitigated (excavated) if they will be impacted by facilities development. Depending on the nature of the archaeological resource, such mitigation could be costly and take up to eight months to complete. Mitigation of archaeological resources that would be impacted should therefore take place during an early stage of facilities development, and will require consultation with and review by the Heritage Branch, Ministry of Citizenship and Culture.

Due to the nature of on-site survey during Phase 4A (i.e., confined to areas with the ground surface exposed), subsequent studies of the selected siting option will require additional and further field survey. This should involve an examination of all areas not surveyed in Phase 4A, and a re-examination of all archaeological resources documented in Phase 4A. Additional archival research will also be necessary to further document non-standing historic sites. This should involve a complete title search on each property and attempts to compile a life history of all registered landowners of each property from the time those properties were deeded from the Crown to the present day.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

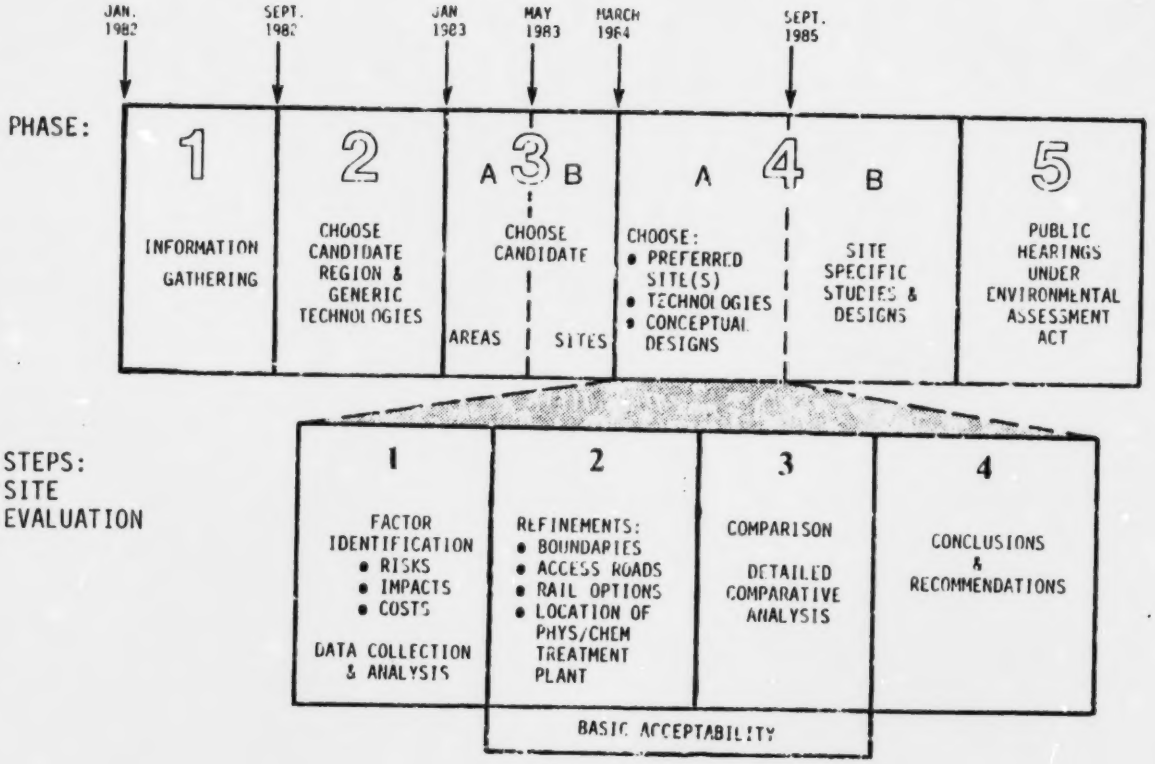
This report presents a synthesis of the archaeological resource data (defined in Section 2.2) collected and analyzed by the Museum of Indian Archaeology during Phase 4A of the Ontario Waste Management Corporation's (OWMC) Facilities Development Process. The overall intent of this process is to select a suitable location for facilities for the safe treatment and disposal of special wastes.

The Museum of Indian Archaeology has been involved in all phases of OWMC's Facilities Development Process (Museum of Indian Archaeology 1982a; 1982b; 1984a). A summary of earlier work is contained in the Museum's Phase 3B technical report (Museum of Indian Archaeology 1984b, OWMC Site Selection Process, Phase 3B: Selection of Candidate Sites: Heritage Resources).

In 1984, Phase 3B led to the selection of eight candidate sites within the Golden Horseshoe area of southern Ontario (Figure 1). In Phase 4A, the detailed comparative evaluation of those eight candidate sites, was initiated. The purpose of Phase 4A was to compare the eight candidate sites on the basis of a number of criteria and to select one or more of those candidate sites as the preferred location for the proposed facilities.

Subsequent to the collection of archaeological data on the eight candidate sites, the site selection team rejected one candidate site (LF-2N) from further consideration (see Chapter 5), and ultimately conducted a comparative evaluation of six siting options (see Chapter 7 for a definition

FIGURE 1 FACILITIES DEVELOPMENT PROCESS - PHASE 4A: SELECTION OF A PREFERRED SITE(S)



Source: [illegible] Limited, 1985 [illegible] PHASE 4A REPORT

of siting option and list of siting options).

1.2 STUDY AREAS

The overall OWMC Phase 4A analysis involved several study areas: the candidate site, the candidate site vicinity (roughly a 2 km radius from the centre of each candidate site), access roads to the candidate site; rail access options to the candidate site, air dispersion/air quality zones around the candidate site, and the community/regional study area (see M.M. Dillon Ltd., 1985b Site Selection Process, Phase 4A: Selection of a Preferred Site(s)-Site Selection).

During Phase 4A, the Museum of Indian Archaeology collected data for only two of these study areas: the candidate site and the candidate site vicinity.

Data on archaeological resources for the candidate site vicinity study area were obtained from Phase 3B and from archival research and questionnaires and interviews during Phase 4A. Data for the candidate site study area involved those sources and on-site field surveys.

Data on archaeological resources at the community/regional level were collected during Phase 3B. It was assumed that access roads would not require widenings or realignments (see M.M. Dillon Ltd., 1985c Site Selection Process, Phase 4A: Selection of a Preferred Site(s)-Transportation), so there would be no impacts to archaeological sites located adjacent to access roads. Rail access was treated as an opportunity rather than a requirement of facility development (M.M. Dillon Ltd. 1985b), so it was not necessary to collect archaeological data along potential rail lines. It is recommended that if road widenings, road alignments, or rail access are required for the selected siting option, then areas of construction should first be subjected to an archaeological study.

The boundaries for the candidate site study area used for the Museum's

Phase 4A data collection were those as defined during Phase 3B. Subsequent refinements to site boundaries during Phase 4A led to revisions to the data base, as outlined in Section 6.0 of this report.

1.3 SCOPE AND GENERAL APPROACH

In earlier phases of the site selection process data on archaeological resources were collected from archival research. In Phase 4A additional archival research was conducted for on-site properties and properties in the vicinity of the eight candidate sites. On-site field surveys were conducted to verify existing data and to collect new data, and information on archaeological resources supplied by the public was compiled.

The scope of Phase 4A was to obtain as much information as possible on the archaeological resources (defined in Section 2.2) present on-site and in the vicinity of each of the eight candidate sites. This would then allow statements on the prehistory and history of each candidate site and the identification of significant archaeological resources which might be impacted if a candidate site was selected as the preferred location for the proposed facilities. The archaeological data were considered in the refinement of candidate site boundaries, were input to the detailed comparative evaluation of siting options, and contributed to the selection of a preferred site in terms of the factor "archaeological resources".

The field survey involved a team of archaeologists walking over the ground surface in systematic transects looking for prehistoric and historic artifacts and other evidence for a prehistoric or historic occupation of the area. The adopted strategy meant that fieldwork was conducted only on areas where the ground surface was exposed (i.e., ploughed fields and fields covered in open crops such as corn, young grain, and young beans); areas covered in woodlot, closed crop (i.e., pasture, hay, mature grain, and mature beans), or buildings, were not examined. This strategy, which was considered to be adequate for the detailed comparative evaluation, is explained in more detail

in Section 3.2.2.

As part of the data collection procedures, all landowners were asked to complete a questionnaire on which they had the opportunity to note if they had found, or knew of anyone who had found, items of historical or cultural significance on their property. The responses to these questions led to follow-up interviews by the Museum of Indian Archaeology, when more precise information was collected and artifacts were documented and photographed. Furthermore, the Museum approached all landowners on each candidate site who had land that could be surveyed, to obtain their permission to walk on their property; this provided another opportunity for the Museum to ask if any items of historical or cultural significance had been found on their property. The latter procedure was repeated for farmers who may have rented land on each candidate site.

This report therefore incorporates information on archaeological resources from four sources: existing archival data collected in earlier phases; additional archival data collected on a site-specific basis; on-site fieldwork; and public input. These sources of information are outlined in more detail in Section 3.2.

1.4 LIMITATIONS

Data on archaeological resources are limited to the extent of the background information available and to the amount of land that was available for survey on each of the candidate sites. Table 3 indicates the total area of land surveyed on each candidate site and the proportion of that land as a percentage of the total area of the candidate site. While this percentage varied on each candidate site, it is believed that a representative sample of each candidate site was examined. There were no limitations on the data input through public contacts since in all cases landowners were willing to convey their knowledge of archaeological resources to the Museum. There was a minor limitation in terms of access to properties in that three landowners refused

permission to allow fieldwork on their property.

The location of and certain data on archaeological sites are confidential based on guidelines of the Archaeology Unit, Heritage Branch, Ministry of Citizenship and Culture. These guidelines are contained in Appendix H. The locations of archaeological sites have been revealed to OWMC and the site selection team for planning purposes, but are excluded from this report since, as the Ministry guidelines specify, these locations cannot be revealed to the general public.

1.5 FACILITIES CHARACTERISTICS ASSUMPTIONS

The facilities proposed by OWMC included a physical/chemical treatment plant, an incinerator, and a landfill. Various combinations of these three facilities were possible on the eight candidate sites. For example, some candidate sites were being considered only as the location of a landfill, others were being considered only as a location for the physical/chemical plant and incinerator, while others were being considered as potentially suitable for all three facilities.

These facilities characteristics assumptions did not affect the work carried out by the Museum of Indian Archaeology during Phase 4A. The Museum was instructed to collect archaeological resource data on the entire candidate site irrespective of the potential use of that candidate site for one, two, or all three of the proposed facilities. This was based on the assumption that potentially all of the candidate site would be acquired and used for the proposed OWMC facilities and also on the assumption that potentially any and all archaeological resources documented on the candidate site would be impacted by facilities constructed on that candidate site.

From the outset of Phase 4A, candidate site PI-27E was considered only for certain facilities (physical/chemical treatment plant and/or incinerator). During Phase 4A, engineering site layouts confirmed that only a portion of the

original site (boundaries defined during Phase 3B) was required for such facilities (Monenco Limited 1985, Site Selection Process, Phase 4A: Selection of a Preferred Site(s)-Engineering). The decision was made to confine the area of consideration for the comparative evaluation to that portion of the site south-southeast of the railway line which runs diagonally through the site (M.M. Dillon Ltd. 1985b).

This decision was made after the Museum had collected data for the entire site. Therefore, as noted in Section 6.5, these data were revised to include information only from that portion of the site south-southeast of the railway line.

CHAPTER 2:

IDENTIFICATION AND APPLICATION OF FACTORS AND INDICATORS

2.1 RATIONALE

Throughout the site selection process the Ontario Waste Management Corporation has utilized information on the cultural environment. They have adopted the definition of "environment" from the Ontario Environmental Assessment Act (1975) in which "environment" is defined to include "any building, structure, machine, or other device or thing made by man". The rationale for the study of archaeological resources was to provide information on the archaeological resources present on-site and in the vicinity of each candidate site. This information was input to the detailed comparative evaluation and identified significant archaeological resources which might be impacted by facilities development on each candidate site. In this way, significant archaeological resources could be studied in more detail, subjected to a mitigative excavation, or avoided, if they were located on the candidate site or sites selected as the preferred location for the proposed facilities. Data on archaeological resources were used to assist in the refinement of candidate site boundaries and contributed to the comparative evaluation of siting options.

2.2 DEFINITION OF ARCHAEOLOGICAL RESOURCES

Native aboriginal peoples have occupied southern Ontario since about 9000 B.C. Archaeologists have subdivided the history of the occupation of southern Ontario into a series of periods, outlined in Table 1. These periods extend into the historic era to include the time of the first sustained contact

Table 1: Outline Chart of Ontario Prehistory

Period	Group	Time Range	Comment
PALAEO-INDIAN	Fluted Hi-Lo	9000 - 7500 B.C.	Big game hunters small, nomadic groups
ARCHAIC			
Early	---	7500 - 5500 B.C.	Nomadic hunters and gatherers
Middle	---	5500 - 4000 B.C.	
Late	Inverhuron Laurentian	4000 - 1000 B.C.	Polished stone tools
Transitional	Glacial Kame Broadpoint	2000 - 1000 B.C.	Burial ceremonialism
WOODLAND			
INITIAL			
Early	Meadowood Red Ochre	1000 - 300 B.C.	Introduction of pottery
Middle	Saugeen Western Basin	300 - A.D. 500	
TRANSITIONAL	Princess Point Riviere au Vase	A.D. 500 - 800	Village life and agriculture
TERMINAL			
Early	Glen Meyer Pickering Younge	A.D. 800 - 1300	
Middle	Middleport	A.D. 1300 - 1400	Large palisaded villages
Late	Neutral Huron	A.D. 1400 - 1550	
HISTORIC	Neutral Huron Mississauga	A.D. 1550 - 1650	contact between Natives & Europeans
	British French	A.D. 1550 - present	

between European explorers and missionaries and native aboriginal peoples, circa A.D. 1500-1550. The historic era also includes the continued occupation of southern Ontario by native aboriginal peoples from the time of their first contact with Europeans to the present day, and the occupation of southern Ontario by European explorers, missionaries, settlers, and by the first generations of non-native peoples born and raised in the area now defined as southern Ontario.

Archaeological resources may therefore include any evidence for the occupation or use of a locality by man from about 9000 B.C. to the present. This may range from a single artifact to a large village or town. For archaeological purposes, artifacts and sites are generally not considered to be "historic" unless they are at least one hundred years old (i.e., pre-A.D. 1885), but for this study a date of A.D. 1876-1878 was used since that was the date of publication of one of the primary sources of historic data, namely the "Historical Atlas" series for every county in southern Ontario. This date was also used in Phase 3B (Museum of Indian Archaeology 1984b, OWMC Site Selection Process, Phase 3B: Selection of Candidate Sites: Heritage Resources). Furthermore, archaeological research is generally confined to prehistoric and historic remains which are not standing today, while historians and historical researchers generally study historic remains which are standing today.

For this study, the Museum of Indian Archaeology undertook the collection and analysis of data on archaeological resources, with archaeological resources defined as all native aboriginal archaeological sites dating between 9000 B.C. and A.D. 1876-1878 and historic Euro-Canadian sites which are not standing today and date between A.D. 1500-1550 and A.D. 1876-1878. One of OWMC's consultants, The Institute of Environmental Research, employed a sub-consultant, Historica Research Ltd., to collect data on historic Euro-Canadian sites which remain standing today, and their data are incorporated into a separate report (Historica Research Ltd. 1985, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Heritage Assessment). It is important to note that the Museum of Indian Archaeology's report deals with <u>non-standing</u> archaeological resources, while the report by Historica Research Ltd. deals

with standing heritage features

2.3 FACTOR AND INDICATORS

Factors and indicators were defined and used by all consultants in the Phase 4A study. Each factor represents a positive or negative consideration which would assist in comparing siting options. The factors refer to risks, impacts, or engineering cost considerations. Factors were subdivided into indicators. Indicators are ways of more precisely identifying, describing and predicting risks, impacts, and engineering concerns. The factors and indicators used by the Museum are explained below and are summarized in Appendix G.

The factor employed by the Museum of Indian Archaeology was archaeological resources, as defined above. Archaeological resources constitute part of the man-made environment and require study under the Environmental Assessment Act. Archaeological resources are non-renewable and provide valuable data on the prehistory/history of a region and of a specific locality. The significance of each archaeological resource is variable and dependent upon its location, size, content, relationship to surrounding archaeological resources, and potential for furnishing data on the prehistory/history of a region.

Archaeological resources were documented on-site and in the candidate site vicinity during the Phase 4A facilities development process and were a factor to be considered in the basic acceptability analysis, the refinement of candidate site boundaries, and the detailed comparative evaluation of siting options.

Although location, size, and content are important in assessing their significance, the primary significance of an archaeological resource lies in its potential to furnish data on the prehistoric/historic occupation or use of a given location. This significance must be evaluated at a site-specific,

local community, and regional scale. The means by which the significance of archaeological resources was assessed are discussed in greater detail in Section 2.5.

The indicator and sub-indicators used in association with the factor of archaeological resources were as follows:

Factor	Indicator	Sub-Indicator
Archaeological Resources	Number of Archaeological Resources	.Number of native archaeological sites
		.Number of non-standing historic Euro-Canadian sites

2.4 FACTOR APPLICATION

In the overall site selection process, OWMC's goals were to minimize risks, impacts, and costs. Factors were identified within three major study components (risk, impacts, and costs) for each of the study areas (candidate site, candidate site vicinity, access roads etc.). The Museum of Indian Archaeology applied the factor of archaeological resources for the category of impacts only, since this factor did not apply to the other major categories of risk and costs. However, estimated costs for the mitigation of significant archaeological resources were derived by the Museum and forwarded to the engineering consultant (Monenco) for inclusion in the cost analysis.

Data on archaeological resources were collected for two study areas, the candidate site and the candidate site vicinity. Data on archaeological resources in the candidate site vicinity were used to compile a profile of the prehistory/history of the area and to derive associations between archaeological sites documented on the candidate site and in the candidate site vicinity. However, since the archaeological resources documented in the

candidate site vicinity will not be impacted by facilities development, they were excluded from the detailed comparative evaluation. Thus, the detailed comparative evaluation carried out by the Museum (Chapter 7) involved only a consideration of impacts to archaeological resources documented to date on the candidate sites. For the comparative evaluation, a distinction was made between archaeological resources that were considered to be significant from those not considered to be significant. This distinction is explained in the following section and led to a modification of the indicator and sub-indicators (Section 2.6).

2.5 DETERMINATION OF THE SIGNIFICANCE OF ARCHAEOLOGICAL RESOURCES

2.5.1 TYPES OF ARCHAEOLOGICAL SITES

There are several types of native archaeological sites, and determining the significance of an archaeological site depends in part on the type of site it is. The type of site is determined by its size, location, nature, extent, and content.

Types of archaeological sites are listed below with a brief explanation of each:

.findspot — A single artifact, or a cluster of less than 10 artifacts. The artifact may or may not be diagnostic (i.e., allow designation of its age and cultural affiliation).

.camp site — Generally a site less than 0.1 ha in size that yields more than 10 artifacts, including chert flakes and chert tools. The range of flakes and tools present may indicate that a group of people camped at this location for a brief time (i.e., a few days or a few weeks) and made chert artifacts while camped there. Most sites

dating prior to A.D. 500 are camp sites. There are different types of camp sites, based on the known or inferred activities that took place there. These can include: lithic workshops where chert tools were made; hunting camps where animals were processed after they had been hunted; fishing camps where the primary activity was fishing and processing of fish; other kinds of camp sites where specific resources were exploited and/or processed; or a combination of one or more of the above. Camp sites may or may not yield diagnostic artifacts that allow designation of age and cultural affiliation.

.hamlet — Generally a habitation site 0.1 to 0.2 ha in size occupied after A.D. 500. Hamlets may, upon excavation, reveal evidence that cabins or longhouses were constructed and occupied. Most hamlets served as "satellites" of villages, where a portion of the village population lived during the warm season only.

.village — Villages are habitation sites, generally 0.2 to 3.2 ha in size, that housed a population of 100 or more people for a period of about 15 to 20 years. Villages were occupied year-round, but a portion of the population may have left the village during the warm season to live in hamlets or on camp sites. The Iroquoian-speaking peoples who lived in southern Ontario from A.D. 500 to A.D. 1650 utilized both villages and hamlets, as well as a variety of camp sites.

It is important to note that site type may change after a site is re-visited at a later date since subsequent cultivation may result in the exposure of additional artifacts not noticed during the first visit. For example the location of a findspot may, upon visitation after subsequent cultivation, yield additional artifacts which change its designation to camp.

For this reason, it is preferrable to re-visit all known sites, including findspots, under different survey conditions (i.e., after a field has been cultivated), to search for more artifacts and thus confirm the site type designation. Subsequent visits may also result in the discovery of diagnostic artifacts (defined in Section 2.5.2 below) from sites that did not initially yield such diagnostic artifacts.

2.5.2 DIAGNOSTIC ARTIFACTS

Artifacts are considered to be "diagnostic" when they can be used by an archaeologist or historian to assign an age and/or cultural affiliation. For archaeologists, such artifacts are normally confined to two categories, projectile points (arrowheads) and ceramics, although other types of artifacts can also be diagnostic.

Projectile points include both spear heads hafted on the ends of spears or lances and thrown or thrust like a javelin, and arrowheads hafted on the ends of arrows fired with a bow. The style, shape, size, and nature of the haft changed through time and archaeologists have been able to determine that certain groups of people made and used specific "types" of projectile points at various times. Table 1 lists the major time periods of Ontario prehistory, and each of these time periods is characterized by specific "types" of projectile points that were predominantly used only during those time periods. The more common "types" of projectile points most frequently found in southern Ontario are listed in Table 2 under their corresponding time period. Using this as a guide, archaeologists therefore know that if they find a "Lamoka" type projectile point, it dates to the Late Archaic period circa 4000-1000 B.C. Certain types can be assigned an even narrower time range within those periods. For example, the Lamoka type occurs most frequently on sites dating circa 2500-2000 B.C.

Likewise, the shape, form, method of manufacture, and type of decoration applied to ceramic (pottery) vessels changed through time. The discovery of

Table 2: Diagnostic Artifacts by Time Period

Time Period	Time Range	Diagnostic Artifacts		
		Projectile Point Types	Ceramics	Other
Palaeo-Indian	9000-7500 B.C.	"fluted" Hi-Lo	Not present	-"channel" flakes
Early Archaic	7500-5500 B.C.	Nettling Le Croy Bifurcate Base Stanly Stemmed	Not present	
Middle Archaic	5500-4000 B.C.	Otter Creek	Not present	
Late Archaic	4000-1000 B.C.	Brewerton Side-Notched Brewerton Corner-Notched Lamoka Adder Orchard Innes Crawford Knoll	Not present	-ground slate birdstones and bannerstones -native copper tools -grooved axes -gouges and bayonets -dog burials
Transitional Archaic	2000-1000 B.C.	Genesee Satchell		-soapstone vessels
Initial Woodland (Early and Middle Woodland)	1000 B.C.-500 A.D.	Meadowood Point Meadowood Cache Blade Adena Saugeen Vanport Jack's Reef Corner-Notched Jack's Reef Pentagonal	-introduction of pottery	-red ochre burials -ground slate tools and ornaments -copper and shell beads
Transitional Woodland	A.D. 500-800	Levanna	-cord-wrapped stick motifs -pipes	-village life and agriculture

Table 2: (continued)

Time Period	Time Range	Diagnostic Artifacts		
		Projectile Point Types	Ceramics	Other
Terminal Woodland				
Early	A.D. 800-1300	Glen Meyer	-dentate stamp and linear stamp motifs	-villages, camp sites, and hamlets
Middle	A.D. 1300-1400	Middleport Notched Middleport Triangular	-incised horizontal motifs -effigy pipes	-large villages
Late	A.D. 1400-1550	Nanticoke Notched Nanticoke Triangular	-incised oblique motifs -effigy pipes	-large cemeteries and burial pits
Historic	A.D. 1550-1650	Daniels Triangular Hamilton Serrated	-incised and stamped oblique motifs	-European-made artifacts acquired through trade with missionaries and explorers

pottery automatically dates a site to after 1000 B.C. (i.e., it was not present prior to that time) and, depending on the type of pottery, the way it was made, and the decoration on it, sites can be more precisely dated. For example, if an archaeologist discovers a sherd decorated with an incised horizontal motif, he can be reasonably confident that the site on which it was found dates circa A.D. 1300-1400 since it was during that time period that incised horizontal motifs were most frequently used.

Upon discovery of a site, an archaeologist hopes to be able to assign a site type and an age/cultural affiliation. This is, however, dependent upon the quantity and kinds of artifacts found, which in turn is dependent in part on survey conditions.

2.5.3 SITE SIGNIFICANCE

2.5.3.1 Native Archaeological Sites

To assess the significance of an archaeological site, an archaeologist must know the type of site, its age and cultural affiliation or its potential for yielding diagnostic artifacts that would eventually allow determination of its age and cultural affiliation, and its potential for furnishing data on the prehistory/history of an area. The latter point is in turn dependent in part on the overall knowledge of archaeological resources in an area. For example, if a certain type of site of a specific time period is discovered, its significance is in part determined by the number of other known sites of the same type and time period. If it is the only site of that type and time period known in a region, it is more significant than if twenty similar sites are known.

None of the areas selected by OWMC for the eight candidate sites had been previously subjected to an archaeological survey and, indeed, most of the regions containing the eight candidate sites had not been subjected to detailed archaeological survey or research. Therefore, every archaeological

site documented by the Museum during OWMC's Phase 4A has the potential for furnishing data on the prehistory/history of the candidate site area, the site vicinity, the local community, and the region.

Several implications are made when an archaeological site is assessed as being significant. Most importantly, it is recommended that sites identified as being significant will require further investigation and they may require avoidance or mitigation, if they are located on the candidate site or sites selected as the preferred location for the proposed facilities. [Sites identified as significant on candidate sites not selected for further study in Phase 4B are nevertheless important to note in the event that any future development or construction on those candidate sites (by agencies other than OWMC) will impact those archaeological sites.]

The number of significant archaeological sites (combined with the number of significant non-standing historic sites, defined below) was used in the detailed comparative evaluation of siting options. These archaeological and historic sites were also considered in the refinement of candidate site boundaries.

Since it is unreasonable to consider every archaeological site (and every historic site) as being significant, other criteria were applied to assess significance. These criteria included site type, age and cultural affiliation or its potential for yielding diagnostic artifacts that would eventually allow determination of its age and cultural affiliation, and its potential for furnishing data on the prehistory/history of the area and region.

The following archaeological sites were considered to be significant:

-all camp sites with a known age and cultural affiliation;
-all camp sites with an indeterminate age and cultural affiliation but producing enough artifacts to conclude that future investigation would likely yield diagnostic artifacts to allow determination of age and cultural affiliation;

-all hamlets and villages with a known age and cultural affiliation;
-all hamlets and villages with an indeterminate age and cultural affiliation. By virtue of their definition, hamlets and villages will yield diagnostic artifacts to allow determination of age and cultural affiliation, but these diagnostic artifacts may not be encountered until these sites are investigated further and/or subjected to a test excavation.

No distinction is made on the relative significance of different types of archaeological sites. A camp site may be just as significant as a hamlet or village in terms of the knowledge it gives of the prehistoric use of an area, so all types of sites noted above are equally significant.

In summary, all archaeological sites other than findspots are deemed to be significant. Table 3 lists the number of archaeological sites documented on each of the eight candidate sites, totalling 90. Table 3 also lists the number of those archaeological sites considered to be significant, totalling 25. Thus, 25 of the 90 archaeological sites (27.7%) documented in Phase 4A are designated as significant at this time. It is important to note that the number of significant sites may increase during Phase 4B, when the candidate site or sites selected as the preferred location for the proposed facilities are subjected to further study. It is recommended that Phase 4B include a re-investigation of all findspots discovered in Phase 4A; this re-investigation could result in the recovery of additional artifacts from at least some of the findspots, thereby changing their designation from findspot to camp. In addition, it is recommended that Phase 4B include an archaeological survey of all lands not surveyed during Phase 4A; this may result in the discovery of additional archaeological sites. Archaeological sites identified as being significant will be reviewed with the Heritage Branch, Ministry of Citizenship and Culture prior to the recommendation that they may require mitigation, and mitigation procedures will be reviewed with that Ministry.

2.5.3.2 Non-Standing Historic Sites

A historic site (including both standing and non-standing structures and facilities) may be of archaeological, historical, or architectual interest at the local, regional, national or international level. Its significance may be judged on the basis of a combination of several criteria, including but not limited to the following (derived from Richard Stuart, 1978, "Quantifying the Unquantifiable: Establishing Criteria for a Buildings of Interest List for Use in the Klondike National Historical Site", Parks Canada Research Bulletin 84):

- .time period
- .rarity, uniqueness, or representativeness
- .amount of disturbance
- .interpretive value
- .value towards contributing to knowledge

There are several types of historic sites, and the significance of a historic site must first be assessed on the basis of what type of site it is. Some typical types of historic sites are listed below under five major categories:

RESIDENTIAL:	houses, log cabins, farms
COMMERCIAL:	stores, hotels, breweries
TRANSPORTATION:	roads and bridges, trails, railways and railway facilities, canals
INSTITUTIONAL:	churches, cemeteries, schools, post offices, court houses, jails, meeting halls, custom houses, toll gates, fire halls
INDUSTRIAL:	grist mills, saw mills, manufactories, brick yards, lime kilns, pottery kilns, warehouses, quarries, blacksmith shops, cheese factories, foundries

The Museum of Indian Archaeology made an initial attempt during Phase 4A to assess the significance of the non-standing pre-A.D. 1870-1878 historic

sites documented. It is important to note that the assignment of significance to historic sites is provisional and subject to change. Subsequent studies recommended for the preferred site may lead to the designation of additional sites as being significant, or in the re-assignment of a historic site identified as significant in Phase 4A to not significant.

In general, all historic sites falling in the categories of commercial, institutional, and industrial as outlined above were considered to be significant. This included historic sites such as churches, post offices, stores, blacksmith shops, and factories.

Historic sites in the category of transportation were not considered significant since they are common, occupy relatively large areas, and contribute little to the historical interpretation of a candidate site. Aside from bridges and railway stations which may or may not be locally significant, transportation facilities are generally linear corridors that extend beyond the boundaries of the candidate site and have little historical value other than noting that they were present.

Historic sites in the category of residential were the most difficult to assess as significant or not. The primary significance of a standing historic residence may lie in its architectural value, but since the Museum was dealing with non-standing residences this architectural value could not be determined. Residences were considered significant if they represented the first or one of the first structures built on a candidate site. In this way, any structure known to have been built during or prior to the first half of the nineteenth century (i.e., 1850 or earlier), was considered significant (for example, a log cabin built in the 1830s). Residences were also considered significant if they served a dual purpose, such as being used as both a residence and a place of business.

As with significant archaeological sites, no distinction is made on the relative significance of different types of historic sites. A post office, blacksmith shop, hotel, railway station, grist mill, and residence which also

served as a place of business are equally significant in that all provide data on the history of a specific locality.

As with significant archaeological sites, historic sites assessed as being significant will be reviewed with the Heritage Branch, Ministry of Citizenship and Culture prior to the recommendation that they may require mitigation, and mitigation procedures will be reviewed with that Ministry.

2.6 MODIFICATION TO INDICATORS

Past research has demonstrated that a majority of native archaeological sites that are discovered are findspots (defined in Section 2.5.1). Furthermore, a majority of findspots fail to produce additional artifacts if they are re-visited after subsequent cultivation. It is important to record findspots and there is always a potential for a findspot to yield additional artifacts after subsequent cultivation, leading to a change in their site type designation to, for example, camp site.

The archaeological profession regards findspots as important in terms of documenting the prehistoric use of an area, but it does not regard findspots as necessary to mitigate if they are to be impacted by a proposed construction activity. On the other hand, archaeological camp sites, hamlets, and villages (defined in Section 2.5.1) are regarded as necessary to mitigate if they are to be impacted by a proposed construction activity. This is due to the fact that camp sites, hamlets, and villages are larger in size, were occupied for a longer period of time, and yield more information on the prehistoric use of a locality than findspots.

For these reasons, a distinction was made between archaeological resources considered to be significant and those resources considered not to be significant. As noted in Section 2.5.3 above, native archaeological sites classified as findspots were not considered to be significant, while camp sites, hamlets, and villages were considered to be significant. Likewise, a

distinction was made between certain types of non-standing historic sites, with residential sites generally not considered to be significant while most commercial, industrial, institutional, and transportation-associated sites were considered to be significant.

This distinction led to a modification of the indicator used for the factor archaeological resources, such that only those sites considered to be significant were used in the refinement of candidate site boundaries, comparative evaluation of siting options, and input to cost analysis.

This is summarized as follows:

Factor	Indicator	Sub-Indicator
Archaeological Resources	Number of Significant Archaeological Resources	.Number of significant native archaeological sites
		.Number of significant non-standing historic Euro-Canadian sites

CHAPTER 3:

DATA COLLECTION AND ANALYSIS

3.1 GENERAL METHODOLOGY

Data collection and analysis in Phase 4A were aimed towards documenting archaeological resources on and in the vicinity of the eight candidate sites. Data on archaeological resources at the community and regional scale were covered in Phase 3B, derived from existing archival sources (Museum of Indian Archaeology 1984b, OWMC Site Selction Process, Phase 3B: Selection of Candidate Sites: Heritage Resources).

3.2 SOURCES OF INFORMATION

The following sources of information were used:

- data collected from archival research during previous phases;
- additional archival research collected on a site-specific basis during Phase 4A;
- on-site field surveys (limited to areas on the candidate site where the ground surface was exposed, including ploughed fields and fields covered in open crops such as corn, young grain, and young beans); and
- public input.

Each of these sources of information are discussed in more detail below.

3.2.1. ARCHIVAL RESEARCH

Archaeological research in Ontario must adhere to the requirements of the Ontario Heritage Act (1975). This act requires that all archaeological research involving fieldwork be conducted under a licence issued to qualified researchers by the Ministry of Citizenship and Culture. This Act also stipulates that the licenced researcher file a report on that fieldwork with the Ministry. An "Archaeological Site Record Form" must be completed for each and every archaeological site discovered. These forms are completed by the researcher and copies must be filed with the Ministry of Citizenship and Culture's Heritage Branch, located in Toronto. Prior to submitting this form, each archaeological site is assigned by the Ministry a unique designation code, referred to as a "Borden number", in the format of two upper case letters, two lower case letters, and a number, as follows: AgGs-14. Each set of four letters refers to a specific area of land defined on the basis of latitude and longitude and measures 10 minutes latitude by 10 minutes longitude. In southern Ontario this means that each Borden block encompasses approximately 250 square kilometres. Each archaeological site discovered within that block is assigned a number, commencing with 1. Thus, AgGs-14 is the fourteenth site found in block AgGs, and AgGs is a unique block of land extending from longitude $79^{o}00'$ to $79^{o}10'$ and from latitude $43^{o}00'$ to $43^{o}10'$.

Archival research on known archaeological sites therefore included an examination of all existing "Archaeological Site Record Forms" and reports by licenced archaeological researchers on file at the Heritage Branch, Ministry of Citizenship and Culture that pertained to the area of each candidate site.

Archival research on historic sites relied primarily on "Historical Atlases" which were published for each county in the study area between 1876 and 1878. These contain township maps showing the locations of villages, churches, schools, post offices, stores, mills, and other buildings; they also show the locations of most houses standing in 1876-1878, and provide the names of most of the landowners. These maps were used to ascertain the location of historic buildings standing on and in the vicinity of each candidate site in

1876-1878. The on-site field survey attempted to ascertain if these buildings remain standing today or, if these buildings were not standing today, whether evidence could be found to confirm their existence. If these buildings were standing today, they were noted but not researched further since this was beyond the scope of the Museum of Indian Archaeology's terms of reference. If these buildings were not standing, attempts were made to document them through archival research, on-site fieldwork, and interviews with local residents. If structural ruins and/or historic artifacts such as fragments of china, glass, and crockery were visible, they were treated as archaeological sites. If the name of the landowner could be determined, attempts were made to learn more about that landowner through archival research (published township and county histories) and interviews with local residents.

3.2.2 ON-SITE FIELD SURVEYS

As noted in Sections 1.2 and 1.3 above, on-site field survey was limited to those areas on the candidate site where the ground surface was exposed, namely ploughed fields and fields in open crop cover (i.e., corn, young grain, or young beans, where the ground surface was visible between crop rows).

The intent of the field survey was to examine areas where the ground was exposed in search of evidence for prehistoric and historic (non-standing) sites.

Field survey took place at various times between August 14 and December 18, 1984. In all cases the Museum attempted to survey all fields with the ground surface exposed, and return visits were made to candidate sites as more land became available for survey through ploughing and crop harvesting. By this means, all fields with the ground surface exposed during the period August 14 - December 18 were surveyed by the Museum on seven of the eight candidate sites. On the eighth candidate site (PI-1N) all but three available fields were surveyed; these three fields were not surveyed because the landowners refused permission.

The Museum of Indian Archaeology (London, An Affiliate of The University of Western Ontario) served as a sub-consultant to the firm of Gartner Lee Associates to collect archaeological resource data for the OWMC Site Selection Process. The Museum also served as a sub-consultant to the firm of Walker, Wright, Young Associates to collect archaeological resource data for the Environmental Assessment of the Landfill Component of the Region of Halton's Solid Waste Management System. For that project, the Museum conducted a field survey on six candidate sites selected by the Region of Halton study as potential locations for a landfill facility in the Region of Halton (Museum of Indian Archaeology 1985, Environmental Assessment of the Landfill Component of the Region of Halton's Solid Waste Management System, Phase 2, Stage 2C: Archaeology). It so happened that two of the candidate sites selected by the Halton Study, their Sites D and E, overlapped with two of OWMC's candidate sites, PI-1N and LF-4N. The Museum conducted field surveys on Halton Sites D and E prior to the initiation of field surveys for OWMC on candidate sites PI-1N and LF-4N. The Region of Halton agreed that the archaeological resource data collected on their behalf could be used by the Museum for input into the OWMC project. Therefore, this report includes data on archaeological resources collected by the Museum through field surveys on Halton Sites D and E in June and July, 1984. However, the Museum also conducted additional field surveys on OWMC candidate sites PI-1N and LF-4N, on fields that became available for survey after the Halton study was completed and on fields that did not overlap with Halton Sites D and E.

Since Halton Site E was much larger in size than OWMC candidate site LF-4N, the Museum's fieldwork on Halton Site E encompassed a large tract of land north of LF-4N. This meant that the Museum collected data through on-site fieldwork in the vicinity of LF-4N, while no fieldwork was conducted in the vicinity of the other seven OWMC candidate sites (except PI-27E, noted below). This does not, however, influence the detailed comparative evaluation of siting options since that comparison was made on the basis of significant archaeological resources located on-site.

Except as noted above, field survey was confined to properties within the boundaries of the eight candidate sites selected by OWMC; field surveys were not conducted in the site vicinity. One exception to this was an examination of two ploughed fields adjacent to candidate site PI-27E. This was necessitated by the report of two archaeological sites within these fields, since it was thought that both of these archaeological sites might extend across roads onto the candidate site (see Section 4.9, B.1).

Prior to initiating a field survey, attempts were made to contact each landowner to obtain their permission to walk on their property. This also provided an opportunity to ask each landowner if they had ever found items of historical or cultural significance on their property. The landowners were receptive to these requests and in some cases provided information that led to the discovery of archaeological resources on their property. Only three landowners refused permission for the Museum to survey their property. In addition, some farmers who rented or leased land on the candidate sites were contacted for permission to survey and questioned on whether or not they had observed archaeological material on the fields they cultivated.

The standard procedure for conducting an archaeological survey is to walk over areas where the ground surface is exposed in systematic transects at 10 metre intervals. This procedure was followed on ploughed fields and on fields covered in young grain or young beans. In most corn fields, however, transects were spaced at 3 to 5 metre intervals since the survey was conducted after the corn had reached a height of over 2 metres; the reduced interval was necessary to allow effective communication between the crew members.

When a prehistoric or historic artifact was found, the survey interval was reduced to 1 metre and an extensive search of the surrounding area was made. As additional artifacts were found they were placed in small plastic bags and left in location. When the site had been collected in this manner, its extent and distribution could be noted by the distribution of bags of artifacts. A sketch map of the site was made, and its location was plotted on aerial photographs and 1:10 000 scale topographic maps. A permanent datum was

then established, normally at the edge of the field, and all artifact locations were mapped using a transit and stadia. This would then allow a site map to be produced in the lab. Sites were designated by a field number (i.e., PI-27E-5) and all artifacts from that site were labelled with a field number (i.e., PI-27E-5:26). In the lab, a "Borden number" was obtained for that site, and all artifacts were catalogued using that Borden number (i.e., PI-27E-5:26 became permanently catalogued as AgGs-14:37).

Exceptions to this procedure occurred for sites discovered in corn fields, where the height of the corn prohibited use of a transit and stadia. In these cases, all artifacts were individually mapped by pacing their location from the edge of the field.

The field survey attempted to re-locate any known archaeological sites located on the candidate site, as previously documented from Phase 3B (Museum of Indian Archaeology 1984b).

All sites from which cultural material was collected were assigned Borden numbers. This included sites that yielded only one artifact, such as a flake of chert (i.e., a findspot). This is an accepted procedure since a site may be re-visited at a later date under different survey conditions (i.e., after a corn field has been ploughed and cultivated), leading to the subsequent discovery of additional artifacts. Thus, it is important to note the precise location of each artifact found.

3.2.3 PUBLIC INPUT

The landowners of all properties on and in the vicinity of each candidate site were asked to complete a questionnaire that included questions on archaeological resources (Appendix A). Only rarely did a landowner refuse to complete the questionnaire or refuse to comment on the questions about archaeological resources. The completed questionnaires proved to be a valuable source of information that led to the discovery of archaeological and

historic sites on the candidate site, to the documentation of archaeological resources on properties on the candidate site that could not be surveyed due to crop cover, and to the documentation of archaeological resources in the vicinity of candidate sites.

The Museum attempted to contact all landowners, either in person or via telephone, who responded to the questions on archaeological resources. Their information was documented and, if they had artifacts in their possession, these were photographed. Appendix B provides a list of all individuals contacted by the Museum.

3.3 DATA COMPILATION

Data collected from archival research, field survey, and public input was compiled on a site by site basis. Site record forms were completed for all archaeological resources from which cultural material was collected. This material was catalogued, and site maps were drawn. Diagnostic artifacts were photographed. All of the material was analyzed, and all archaeological resources were assessed in terms of their significance. This led to a listing of all archaeological resources deemed to be significant, and these data became part of the procedure for the refinement of candidate site boundaries and the detailed comparative evaluation and ranking of siting options.

Data were compiled under a series of categories; these categories serve as a means of presenting the data in the following chapter (4.0). The categories were as follows:

A. Location (of the candidate site)
B. Prior Knowledge of Archaeological Resources On and In the Vicinity of the candidate site (Existing Environment)
   - B.1 Known Archaeological Sites On the Candidate Site
   - B.2 Known Archaeological Sites In the Vicinity
   - B.3 Known Historic Sites On the Candidate Site

B.4 Known Historic Sites In the Vicinity

C. Archaeological Potential of the Candidate Site (percentage of land on the candidate site falling within 200 metres of tertiary watercourses or within 150 metres of primary and secondary watercourses)

D. Area Surveyed

E. Results

E.1 Archaeological Sites On the Candidate Site

E.2 Archaeological Sites In the Vicinity

E.3 Non-Standing Historic Sites On the Candidate Site

E.4 Non-Standing Historic Sites In the Vicinity

F. Significant Archaeological Resources On the Candidate Site

Table 3: Summary Data

	Candidate Site								
	PI-1N	LF-2N	LF-4N	PI-13N	LF-3C	LF-9C	LF-1E	PI-27E	Total
Total Area of the Candidate Site (in Hectares)	378	172	168	170	259	135	273	188	1743
Total Area of Land Surveyed (in Hectares)	185	115	100	43	116	20	49	66	694
% of Candidate Site Surveyed	49	67	60	25	45	15	18	35	40
Total Number of Native Archeological Sites Documented on Candidate Site	16	0	2	2	42	4	11	13	90
Total Number of Non-Standing Historic Sites Documented on Candidate Site	0	3	1	1	11	4	8	8	36
Number of Significant Native Archaeological Sites On Candidate Site	3	0	0	0	16	1	3	2	25
Number of Significant Non-Standing Historic Sites on Candidate Site	0	0	0	1	5	2	1	2	11

Note: These data pertain to the entire candidate site as defined during Phase 3B and not to subsequent refinements to the boundaries of certain candidate sites (see Section 6.0).

CHAPTER 4:

DESCRIPTION OF ARCHAEOLOGICAL RESOURCES DOCUMENTED

4.1 INTRODUCTION

This section presents a description of the archaeological resource data compiled in Phase 4A for each of the eight candidate sites. The data are presented under a series of categories, as outlined in Section 3.3, to include both archaeological (native aboriginal) and non-standing historic (pre-A.D. 1876-1878) sites on and in the vicinity of the candidate site.

The archaeological resource data summaries are presented in the following order:

Section:	Candidate Site:
4.2	PI-1N
4.3	LF-2N
4.4	LF-4N
4.5	PI-13N
4.6	LF-3C
4.7	LF-9C
4.8	LF-1E
4.9	PI-27E

Data for all chert bifaces and projectile points (including type designation) found on the candidate sites are presented in Table 4; Table 5 contains a summary of all archaeological material recovered and catalogued by candidate site. Maps of each candidate site showing the areas surveyed by the Museum during Phase 4A are contained in Appendix D. Maps of some of the

archaeological sites, showing the distribution of archaeological material, are contained in Appendix E, and most of the diagnostic artifacts are illustrated in photographic plates in Appendix F.

4.1.1 EXISTING ENVIRONMENT

Sections 4.2 to 4.9 provide information on the existing cultural environment of each candidate site, listed as known archaeological resources. This includes native archaeological sites and historic Euro-Canadian sites as known from the Phase 3B documentation (Museum of Indian Archaeology 1984, OWMC Site Selection Process, Phase 3B: Selection of Candidate Sites: Heritage Resources), and area of high archaeological potential as determined at the beginning of Phase 4A for the lands within the original Phase 3B boundaries of each candidate site. Area of high archaeological potential contributed to the methodology used in data collection. The combination of archaeological resources documented in Phase 3B and 4A serve as baseline data on the existing environment; on-site data were then used to refine site boundaries (Chapter 6) and in the comparative evaluation of siting options (Chapter 7).

4.2 CANDIDATE SITE PI-1N

Note: OWMC candidate site PI-1N encompassed all of the land selected as Halton Region candidate site D (see Section 3.2.2). The Museum conducted fieldwork on candidate site D for Halton Region in June 1984 and discovered ten archaeological sites (AiGw-183, 184, 185, 186, AiGx-95, 96, 97, 98, 99, 100) and investigated two previously known archaeological sites (AiGx-45 and 46). All twelve of these sites also lie within OWMC candidate site PI-1N and will be discussed below.

A. LOCATION

The candidate site proper is located on Lots 3, 4, and 5, Concession 2 and Parts of Lots 3, 4, and 5, Concession 1, Town of Milton, Regional Municipality of Halton; formerly in the Township of Trafalgar, Halton County. It is bordered on the north by Brittania Road (Regional Road 6), on the east by Highway 25 (Bronte Road), on the south by the line between Lots 3 and 2, and on the west by the CN Railway. First Line Road runs north to south through the candidate site.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Existing Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were two known archaeological sites on the candidate site:

AiGx-45	Early Woodland findspot (Meadowood projectile point)
AiGx-46	Late Archaic/Early Woodland camp

B.2 Known Archaeological Sites In the Vicinity

The following known archaeological sites were located in the vicinity:

AiGx-43	Archaic camp
AiGx-44	Archaic camp
AiGx-47	Late Archaic/Early Woodland findspot
AiGx-48	Late Archaic/Early Woodland findspot
AiGx-61	Indeterminate findspot
AiGx-62	Woodland findspot
ROM 12	Archaic findspot

B.3 Known Historic Sites On the Candidate Site

There were five residences on the candidate site in 1877 (John Bowes, H.R. and C.T. Macartney, E. Ockerman, George Ford, and J.W. Bowes). In addition, the village of Boyne is located at the northeast corner of PI-1N, but the map of Trafalgar Township in the Historical Atlas of Halton County (1877) indicates that in 1877 there were no buildings associated with this village on the candidate site.

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity, including the village of Boyne, a church and cemetery, and a cheese factory.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 66% of the lands within PI-1N were designated as having a high potential for the future discovery of archaeological sites due to the presence of tributaries of Bronte Creek on the western half of the candidate site and tributaries of Sixteen Mile Creek on the eastern half of the candidate site.

D. AREAS SURVEYED

A total of 126 ha on PI-1N were surveyed by the Museum in June as part of the fieldwork conducted on Halton Region candidate site D, and an additional 59 ha were surveyed in November for OWMC, for a total of 185 ha or 49% of PI-1N. Field conditions and surface visibility were variable, as the various fields surveyed were ploughed or covered in beans, winter wheat, or corn.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

AiGx-45 was a single projectile point registered in 1976 (Roberts 1976), found

in a cultivated field. The area where it was found was surveyed in 1984, but no additional artifacts were found. The projectile point is a Meadowood type of the Early Woodland period, circa 900-400 B.C.

AiGx-46 was registered in 1976 (Roberts 1976) based on information provided by the landowner. A majority of the site was covered in grass in 1984, and no additional artifacts were found. A collection of artifacts in the possession of the landowner (Mrs. Martin) was photographed. These included the base of a fluted point and a Hi-Lo projectile point (Palaeo Indian period circa 9000-8000 B.C.), Brewerton Side-Notched projectile points (Late Archaic period, circa 2500-1000 B.C.), and Meadowood cache blades (Early Woodland period, circa 900-400 B.C.). Although unconfirmed by the Museum's fieldwork, previous reports on this site (Roberts 1976) and the artifacts in Mrs. Martin's collection, lead to the conclusion that this is a significant archaeological resource.

Ten archaeological sites were discovered by the Museum in June 1984 during fieldwork on PI-1N conducted for Halton Region (candidate site D). These were as follows:

AiGw-183	Indeterminate findspot (1 chert biface)
AiGw-184	Late Woodland findspot (1 Levanna projectile point, circa A.D. 800-1300)
AiGw-185	Indeterminate findspot (2 chert flakes and 1 utilized chert flake)
AiGw-186	Indeterminate findspot (1 chert scraper)
AiGx-95	Indeterminate findspot (1 utilized chert flake)
AiGx-96	Late Archaic findspot (1 Orient Fishtail projectile point, circa 1000 B.C.)
AiGx-97	Early Woodland findspot (2 chert bifaces and 1 Adena projectile point, circa 900-400 B.C.)
AiGx-98	Indeterminate findspot (1 projectile point fragment; corner-notched, but too incomplete to assign type or cultural affiliation)

AiGx-99	Indeterminate findspot (1 projectile point fragment and 3 chert flakes)
AiGx-100	Late Archaic findspot (1 Genesee projectile point, circa 1500 B.C.)

One archaeological site was documented by the Museum in June 1984, based on information provided by the landowner, Mrs. Tomosky. The area where this site is reported to be located was not surveyed by the Museum in June, since it was located outside of the boundary of Halton Region candidate site D. This archaeological site lies within the boundary of OWMC candidate site PI-1N and as part of the fieldwork done in the area for OWMC, the Museum attempted to survey the area of the site but was refused permission by the landowner. Therefore its precise location and extent could not be confirmed. The artifacts in Mrs. Tomosky's collection were photographed, and include a number of projectile points typed as follows: two Brewerton Corner-Notched and ten Lamoka (both dating to the Late Archaic period circa 2500-1000 B.C.), and one Jack's Reef Corner-Notched (Middle Woodland period circa A.D. 400-600). These artifacts suggest that this site is a significant archaeological resource.

Three archaeological sites were discovered by the Museum in November during fieldwork conducted for OWMC. These were as follows:

AiGw-188	Late Archaic findspot (1 Brewerton Corner-Notched projectile point, circa 2500-1000 B.C.)
AiGw-189	Indeterminate findspot (1 chert flake)
AiGw-190	Indeterminate camp site (120 chert flakes and 2 chert scrapers)

The latter site, AiGw-190, is considered to be a significant archaeological resource.

E.2 Archaeological Sites in the Vicinity

Information provided on the questionnaires and subsequent interviews by the

Museum ascertained the following:

An archaeological site is apparently located just south of PI-1N. Mr. Harold Jarvis and Ms. Marjorie Jarvis reported that arrowheads were found there. The Jarvis family no longer had these arrowheads in their possession, so they could not be documented or photographed.

Mr. Howard Gowland reported finding arrowheads on his father's farm on Number 1 Side Road west of PI-1N. Mr. Gowland no longer had these arrowheads in his possession.

Mr. Ernest Rayner reported finding an arrowhead on his farm on the Third Line several years ago, but that he had since lost it.

E.3 Historic Sites on the Candidate Site

The five residences on PI-1N noted above, as known from the map of Trafalgar Township in the Historical Atlas of Halton County (1877), remain standing today and were documented by Historica Research Ltd (1986).

E.4 Historic Sites in the Vicinity

No historic sites were documented in the vicinity of PI-1N.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

Three of the archaeological sites on PI-1N are considered to be significant:

-AiGx-46
-AiGw-190
-the site reported on the Tomosky property

4.3 CANDIDATE SITE LF-2N

A. LOCATION

The candidate site proper is located on Lots 9 and 10, Concession 1, East of Hurontario Street, City of Mississauga, Regional Municipality of Peel; formerly in the Township of Mississauga, Peel County. It is bordered on the north by Derry Road West (Regional Road 5), on the east by First Line East, on the south by the line between Lots 9 and 8, and on the west by Highway 10 (Hurontario Street).

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Existing Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site:

There were no known archaeological sites on the candidate site.

B.2 Known Archaeological Sites In the Vicinity:

There were two known archaeological sites within a 4 kilometre radius of the candidate site:

AjGw-1	Archaic/Woodland camp
AjGw-7	Woodland Village

B.3 Known Historic Sites On the Candidate Site

At least one historic site once stood on the candidate site. This was a store, situated within the village of Derry West, located on the southeast corner of the intersection of Hwy. 10 and Derry Road (northwest corner of LF-2N).

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity of the candidate site, including the villages of Derry West, Palestine, Mount Charles, Meadowvale and Brittania.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 66% of the lands within LF-2N were designated as having a high potential for the future discovery of archaeological sites due to the presence of several tributaries of Etobicoke Creek.

D. AREAS SURVEYED

A total of 115 ha or 67% of LF-2N were surveyed, including fields that were ploughed and fields covered with standing corn and young winter wheat. Surface visibility was excellent on all areas except the single large corn field, where visibility was poor due to weeds between the rows.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

No archaeological sites were discovered on the areas of LF-2N that were surveyed. However, Mr. Wm. Golden, a resident on LF-2N, reported that he had found a couple of arrowheads on his 40 ha farm, previously owned by his father and grandfather. This farm occupied the entire northwestern quarter of the candidate site, and the Museum surveyed approximately 32 ha on the property with negative results. Mr. Golden was no longer in possession of these arrowheads, so they could not be documented or photographed. Consequently, these finds could not be registered as an archaeological site.

E.2 Archaeological Sites In the Vicinity

No areas in the site vicinity were surveyed, and none of the public contacts or questionnaires resulted in the documentation of any archaeological sites in the vicinity.

E.3 Historic Sites on the Candidate Site

Information provided by Mr. Wm. Golden confirmed that a store stood on the northwest corner of LF-2N, in the area now occupied by a gas station. This store stood from prior to 1876 until after 1940, and was torn down sometime in the 1940s. Mr. Golden said that it had entrances off of both Derry Road and the road which is now Hwy. 10.

Mr. Golden also provided information on a farm that he owned, passed to him from his father and grandfather. This farm occupied the entire northwestern quarter of LF-2N, consisting of 40 ha. The house and barns stood adjacent to the road which is now Hwy. 10, equidistant from Derry Road to the north and the southern lot line to the south. None of the buildings remain standing today, although the area where they stood remains clearly visible as a patch of trees, hedges, grass and weeds. This farm was owned by Johnson Golden in 1877 (Historic Atlas of Peel County, 1877).

The map of Mississauga Township in the Historical Atlas of Peel County (1877) shows four additional residences on LF-2N. Three of these remain standing today and were documented by Historica Research Ltd. The fourth one was the house of L.D. Sanderson, which was located adjacent to and just south of the store at the intersection of Derry Road and Hwy. 10, fronting Hwy. 10. This area is now a cultivated field; no evidence of a structure remains here and no historic material was observed or collected from this location when surveyed by the Museum.

5.4 Historic Sites in the Vicinity

The village of Derry West occupied the four corners of the intersection of Derry Road and Hwy. 10, and included the store noted above on the southeast corner, an Orange Hall and Protestant Church on the southwest corner (not standing today), a church and cemetery on the northwest corner (standing today), and a school on the northeast corner (not standing today). Local residents referred to the four corners as "Salvation, Education, Damnation, and Starvation" (Roulston 1978:32).

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

There are no known significant native archaeological sites on LF-2N. The store which stood at the intersection of Derry Road and Hwy. 10 may be a significant historic site in terms of local history, but it was torn down and the area it occupied was disturbed by the widening of Hwy. 10 and construction of a gas station. Therefore, this store is not considered to be a significant historic site in this report; it would not be impacted by the proposed OWMC facilities since it has already been impacted by the existing gas station in this location.

4.4 CANDIDATE SITE LF-4N

Note: OWMC candidate site LF-4N overlapped with one of the candidate sites selected by Halton Region for a municipal landfill (Halton Region candidate site E). The Museum conducted fieldwork on candidate site E for Halton Region in June, 1934 (Museum of Indian Archaeology 1985) and discovered one archaeological site, AiGx-101, within that area of candidate site E that overlapped with OWMC candidate site LF-4N. This archaeological site consisted of a single flake of Onondaga chert. In addition, the Museum's fieldwork conducted for Halton Region re-investigated four known archaeological sites (ROM 11, ROM 18, AiGx-59, and AiGx-61) located

within Halton Region candidate site E but located north of OWMC candidate site LF-4N, and discovered one archaeological site (AiGx-102) located within Halton Region candidate site E but north of OWMC candidate site LF-4N.

A. LOCATION

The candidate site proper is located on Lots 6 and 7, Concession 7, Town of Milton, Regional Municipality of Halton; formerly in the Township of Nelson, Halton County. It is bordered on the north by the line between Lots 7 and 8, on the east by Tremaine Road (Regional Road 22), on the south by Brittania Road (Regional Road 6), and on the west by Bell School Line.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Existing Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were no known archaeological sites on the candidate site.

B.2 Known Archaeological Sites In the Vicinity

The following known archaeological sites were located in the vicinity:

AiGx-26	Palaeo-Indian camp
AiGx-27	Indeterminate findspot
AiGx-43	Archaic camp
AiGx-44	Archaic camp
AiGx-45	Early Woodland findspot
AiGx-46	Late Archaic/Early Woodland camp
AiGx-47	Late Archaic/Early Woodland findspot
AiGx-48	Late Archaic/Early Woodland findspot

AiGx-49	Indeterminate findspot
AiGx-50	Archaic camp
AiGx-51	Archaic camp
AiGx-52	Indeterminate camp
AiGx-53	Indeterminate camp
AiGx-54	Archaic camp
AiGx-55	Middle and Late Archaic camp
AiGx-56	Indeterminate findspot
AiGx-57	Indeterminate camp
AiGx-59	Early Archaic camp
AiGx-60	Indeterminate camp
AiGx-61	Indeterminate findspot
ROM 11	Indeterminate findspot
ROM 18	Woodland camp
ROM 21	Palaeo-Indian camp
ROM 22	Indeterminate findspot
ROM 23	Archaic findspot

B.3 Known Historic Sites On the Candidate Site

There were four residences on the candidate site in 1877 (James Ford, James Turnbull, Jacob Bell, and Johnson Agnew).

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity, including the village of Boyne, a cheese factory, a brickyard, two churches, and a cemetery.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 13% of the lands within LF-4N were designated as having a high potential for the future discovery of archaeological sites due to the presence of a two tributaries of Bronte Creek located adjacent to the southwest corner and southern edge of the candidate site.

D. AREAS SURVEYED

A total of 39 ha were surveyed by the Museum in June as part of the fieldwork on Halton Region candidate site E, and an additional 61 ha were surveyed in November for OWMC, for a total of 100 ha or 60% of LF-4N. All fields were ploughed at the time of survey, and surface visibility was excellent.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

One archaeological site (AiGx-101) was discovered in June during fieldwork conducted for Halton Region, and one archaeological site (AiGx-104) was discovered in November during fieldwork conducted for OWMC.

AiGx-101	Indeterminate findspot (1 chert flake)
AiGx-104	Indeterminate findspot (3 chert flakes)

E.2 Archaeological Sites in the Vicinity

Responses to the questionnaires resulted in the documentation of three archaeological sites in the vicinity. No artifacts were collected by the Museum, so these sites have not been registered.

The first site is located north of LF-4N, near the intersection of Bell School Line and Derry Road. Mr. Roy Bousfield, who operates an apple orchard near this intersection, reported finding a single arrowhead in the field east of his house. He could not recall the precise location where it was found, and no longer had the arrowhead in his possession.

The second site is located on the first farm south of LF-4N on the west side of Tremaine Road. Mrs. Earl Snow had in her possession six projectile points. These all date to the Archaic period, circa 2500-1000 B.C., and

include Brewerton Corner-Notched and Brewerton Side-Notched types. They were found on the Snow farm. These projectile points were photographed by the Museum. Mrs. Snow's daughter, Mrs. G. Love, also reported an arrowhead on her questionnaire. Mrs. Snow informed the Museum that this arrowhead was from the Snow farm. Mrs. Love's arrowhead could not be documented or photographed since she had recently moved away from the area.

In addition, Mr. Joseph Stutt responded on the questionnaire that archaeological material had been found on his farm, located north of LF-4N on Tremaine Road. An archaeological site on this farm, AiGx-59, was previously known and was investigated by the Museum as part of the fieldwork conducted for Halton Region as it was within Halton Region candidate site E.

E.3 Historic Sites on the Candidate Site

Three of the residences and farms shown on the map of Nelson Township in the Historical Atlas of Halton County (1877) remain standing today and were documented by Historica Research Ltd. These were, in 1877, the farms of James Ford (today listed as a "Century Farm"), Johnson Agnew, and James Turnbull. A fourth farm shown in the historical atlas, that of Jacob Bell in the northwest quarter of LF-4N, is not standing today. A modern bungalow stands at this location today, and the Museum's fieldwork on ploughed fields north, east, and south of this house did not encounter historic material.

E.4 Historic Sites in the Vicinity

No historic sites were documented in the vicinity of LF-4N.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

None of the archaeological resources on LF-4N are considered to be significant.

4.5 CANDIDATE SITE PI-13N

A. LOCATION

The candidate site proper is located on Lots 3 and 4, Concession 6, Town of Milton, Regional Municipality of Halton; formerly in the Township of Trafalgar, Halton County. It is bordered on the north by the line between Lots 4 and 5, on the east by Sixth Line, on the south by the line between Lots 3 and 2, and on the west by Fifth Line.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Existing Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were no known archaeological sites on the candidate site.

B.2 Known Archaeological Sites In the Vicinity

The following known archaeological sites were located within a 4 kilometre radius of the candidate site:

AjGw-19	Late Archaic/Early Woodland camp
AjGw-22	Late Archaic camp

B.3 Known Historic Sites On the Candidate Site

There were four residences on the candidate site in 1877 (John Ford, Jas. Ford, Thomas Fox, and L. Fox, M.D.).

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity, including the villages of Omagh, Boyne, and Drumquin.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 52% of the lands within PI-13N were designated as having a high potential for the future discovery of archaeological sites due to the presence of Sixteen Mile Creek adjacent to the east edge of the candidate site and several small tributaries of this creek originating on or running through the candidate site.

D. AREAS SURVEYED

A total of 43 ha or 25% of PI-13N were surveyed, consisting entirely of ploughed fields. Surface visiblity was excellent.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

Two archaeological sites were discovered on PI-13N. These were as follows:

AjGw-47	Indeterminate findspot (1 utilized chert flake)
AjGw-49	Indeterminate findspot (1 chert biface/scraper)

E.2 Archaeological Sites in the Vicinity

No archaeological sites were documented in the vicinity of PI-13N.

E.3 Historic Sites on the Candidate Site

One historic site on PI-13N was registered, as AjGw-48, resulting from the

Museum's discovery of a small amount of china, crockery, and glass fragments. The location of these finds coincides with a residence shown on the map of Trafalgar Township in the Historical Atlas of Halton County (1877). This was, in 1877, the residence of A. Fox, M.D. Mr. Colin Marshall informed us that this was the first one constructed on the candidate site, that it was occupied after 1900, and that a barn once stood northwest of the house. A laneway ran down the hill from the house along the south side of a tributary of Sixteen Mile Creek, exiting onto the Sixth Line. Although overgrown with weeds and shrubs, this laneway remains clearly visible today. The 1:25000 topographic map (Hornby 30 M/12C, Edition 2) shows a dam located on this tributary at the base of the hill below where the house and barn stood, but no evidence of this dam remains today.

Three residences on PI-13N shown on the map of Trafalgar Township in the Historical Atlas of Halton County (1877) remain standing today and were documented by Historica Research Ltd. In 1877, these were the farms of John Ford, Jas. Ford, and Thomas Fox.

Mr. Colin Marshall reported on his questionnaire that an old tombstone was located on his father's farm, this being the farm of John Ford in 1877, located along the Fifth Line in the northwest quarter of PI-13N. The Museum located this tombstone with Mr. Marshall. It was lying beside a shed on the farm. It was discovered that the farmhouse had at one time been rented to a man who was caretaker of the cemetery beside the church in Boyne, and the tombstone was actually one that had been replaced by a stone monument at that cemetery.

E.4 Historic Sites in the Vicinity

No historic sites in the vicinity of PI-13N were documented.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

One of the archaeological resources on PI-13N is considered to be significant.

This is the site registered as AfGv-48, and it includes the pre-1877 residence of Dr. A. Fox, the laneway from the Fox residence to the Sixth Line, and a possible mill on a tributary of Sixteen Mile Creek in front of the Fox residence.

4.6 CANDIDATE SITE LF-3C

A. LOCATION

The candidate site proper is located on Lots 5, 6, and 7, Concession 1 and Part of Lot 7, B.F. Concession, Township of West Lincoln, Regional Municipality of Niagara; formerly in the Township of Gainsborough, Lincoln County. It is bordered on the north by Elcho Road, on the east by a hydro corridor, on the south in part by Zumstein Road, and on the west by Regional Road 16, which is referred to locally as both Port Davidson Road and Smithville Road. Krick Road runs north to south through the candidate site.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Existing Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were no known archaeological sites on the candidate site.

B.2 Known Archaeological Sites In the Vicinity

There were nine known archaeological sites in the vicinity, all located south of LF-3C along both sides of the Welland River. These were:

AfGv-26 Princess Point/prehistoric Neutral camp

AfGv-27	Archaic camp
AfGv-28	Archaic camp
AfGv-63	Late Archaic camp
AfGv-64	Late Archaic/Princess Point camp
AfGv-65	Princess Point camp
AfGv-66	Archaic/prehistoric Neutral camp
AfGv-67	Archaic camp
AfGv-999	unconfirmed report of Late Woodland camp. [Ellis (1979:65) notes that pottery and pipes were found in this area.]

B.3 Known Historic Sites On the Candidate Site

There were a number of historic sites on the candidate site, including the Elcho Church and Cemetery (standing today) and, based on the map of Gainsborough Township in the Historical Atlas of Lincoln and Welland Counties (1876), the residences of H. Frank, J.S. Robins, I. Comfort, E. Vaughan, John Garner, (another) E. Vaughan, F.L. Smith, J.C. Depotty, Wm. Baldwin, at least two other residences for which no names were given, and a post office.

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity, including two schools, a church, a cemetery, and a blacksmith shop.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 50% of the lands within LF-3C were designated as having a high potential for the future discovery of archaeological sites due to the presence of Beaver Creek, which cuts across the northern portion of the candidate site, the presence of three tributaries of the Welland River in the southern portion of the candidate site, the proximity of the candidate site to the Welland River (1.5 km to the south), and the proximity of the candidate site to known archaeological sites on the Welland River.

D. AREAS SURVEYED

Approximately 116 ha or 45% of LF-3C were surveyed. Areas surveyed were covered in standing corn with variable visibility, or ploughed with excellent visibility.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

The following archaeological sites were discovered on LF-3C:

AgGv-2	Prehistoric Neutral (1400-1550 A.D.) village (1 lump of clay, 1 Nanticoke Notched projectile point, 1 Late Archaic projectile point, 1 biface, 2 chert cores, 16 utilized chert flakes, and 116 chert flakes)
AgGv-3	Indeterminate findspot (1 chert biface fragment)
AgGv-4	Indeterminate findspot (1 chert flake)
AgGv-5	Indeterminate camp (3 chert bifaces, 1 utilized chert flake, and 19 chert flakes)
AgGv-6	Indeterminate findspot (1 chert flake)
AgGv-8	Indeterminate findspot (1 chert core)
AgGv-9	Indeterminate camp (2 chert cores, 1 utilized chert flake, and 11 chert flakes)
AgGv-10	Indeterminate findspot (3 chert flakes)
AgGv-11	Early Iroquoian (A.D. 600-1100) village or hamlet (1 fragmentary ceramic sherd, 25 lumps of clay, 1 Levanna projectile point, 2 Archaic projectile points, 3 projectile point fragments, 2 chert cores, 1 utilized chert flake, 128 chert flakes, 1 bone fragment)
AgGv-13	Indeterminate findspot (1 chert flake)
AgGv-14	Indeterminate findspot (1 chert flake)
AgGv-15	Indeterminate findspot (1 ground stone celt fragment)
AgGv-16	Indeterminate findspot (3 chert cores, 2 utilized chert

	flakes, and 9 chert flakes)
AgGv-17	Indeterminate findspot (2 chert cores, 1 utilized chert flake, and 4 chert flakes)
AgGv-18	Prehistoric Neutral (1400-1550 A.D.) village or hamlet (2 fragmentary ceramic sherds, 1 ceramic pipe stem, 4 Nanticoke Triangular projectile points, 2 Nanticoke Notched projectile points, 1 biface, 14 utilized chert flakes, and 141 chert flakes)
AgGv-19	Indeterminate camp (1 chert biface, 1 chert core, and 16 chert flakes)
AgGv-20	Indeterminate findspot (1 chert core and 2 chert flakes)
AgGv-21	Indeterminate findspot (1 utilized chert flake and 1 chert flake)
AgGv-22	Indeterminate camp (3 chert scrapers, 4 utilized chert flakes, and 32 chert flakes)
AgGv-23	Indeterminate findspot (1 utilized chert flake)
AgGv-24	Indeterminate camp (1 chert biface, 1 chert scraper, 3 utilized chert flakes, and 20 chert flakes)
AgGv-25	Indeterminate camp (1 utilized chert flake and 18 chert flakes)
AgGv-26	Archaic camp site (1 large Archaic-like biface, 5 utilized chert flakes, 5 chert cores, 64 chert flakes)
AgGv-27	Early Woodland (400-1 B.C.) findspot (1 Adena projectile point, 1 chert flake)
AgGv-28	Prehistoric Neutral (circa 1400-1550 A.D.) findspot (1 Nanticoke Triangular projectile point fragment)
AgGv-29	Late Archaic (2500-1000 B.C.) camp site (1 Brewerton Corner-Notched projectile point, 2 utilized chert flakes, 19 chert flakes, 1 sandstone abrader)
AgGv-30	Indeterminate findspot (1 chert flake)
AgGv-31	Indeterminate findspot (1 utilized chert flake and 1 chert flake)
AgGv-32	Indeterminate findspot (1 utilized chert flake)

AgGv-33	Prehistoric Neutral (circa 1400-1550 A.D.) findspot (1 Wanticoke Notched projectile point (broken and used as a scraper), 1 chert core, 4 chert flakes)
AgGv-34	Indeterminate findspot (2 chert flakes)
AgGv-36	Indeterminate findspot (3 chert flakes)
AgGv-37	Indeterminate camp (65 chert flakes, 2 projectile point tip fragments)
AgGv-38	Indeterminate findspot (2 utilized chert flakes and 3 chert flakes)
AgGv-39	Late Archaic (circa 2500-2000 B.C.) camp (1 Lamoka projectile point and 21 chert flakes)
AgGv-40	Indeterminate camp (18 chert flakes)
AgGv-41	Indeterminate camp (2 chert biface fragments, 1 utilized chert flake and 29 chert flakes)
AgGv-42	Indeterminate camp (1 chert biface fragment, 4 utilized chert flakes and 56 chert flakes)
AgGv-43	Indeterminate findspot (1 chert flake)
AgGv-44	Indeterminate findspot (3 chert flakes)
AgGv-45	Indeterminate findspot (1 chert flake)

An archaeological site is reported to be on a knoll just north of Beaver Creek on the farm of Mr. John Swayze. Mr. Swayze had collected arrowheads and other lithic material from this knoll, but he had given these to his relatives and none remained in his possession. This area was covered in pasture and was not investigated by the Museum.

E.2 Archaeological Sites In the Vicinity

The following information on archaeological sites in the vicinity was collected.

Mr. Harley Black, who lives on the south side of Canborough Road just west of Regional Road 16, has a large collection of artifacts. Most of these were found by him on an archaeological site on his farm, adjacent to the

Welland River. His collection was previously documented (Lennox 1976) and the archaeological site on his property was registered as AfGv-66. Lennox (1976) carried out a test excavation on this site. This is a multicomponent camp site that has produced material dating to the Late Archaic, Early Woodland, Middle Woodland, and Late Woodland (Princess Point, Middleport, and prehistoric Neutral) periods. The Museum photographed Mr. Black's collection.

Stothers (1974) registered two additional sites, AfGv-27 and AfGv-28, located east of the Black site (AfGv-66). These are both listed as Archaic camps. Mr. Archie Huizinga has a collection of artifacts from each of these sites. The Museum photographed Mr. Huizinga's collection.

The Museum received information on two additional sites southeast of LF-3C. Mr. Norm Vaughan has some undiagnostic artifacts that he found in a ploughed field behind his house on the east side of Krick Road, north of Canborough Road. Mr. George Gerryts, who lives on the south side of Canborough Road east of Krick Road, has a small collection of artifacts found on his property adjacent to the Welland River. These include a ground stone celt and a slate gorget. The latter artifact dates to the Late Archaic/Early Woodland period, circa 2500-400 B.C.

One archaeological site north of LF-3C was documented. Mr. Loyal Krick's family discovered several arrowheads in a ploughed field on the east side of Krick Road north of Elcho Road West.

E.3 Historic Sites on the Candidate Site

The Museum discovered three historic sites on the candidate site (AgGv-7, AgGv-12, AgGv-35) and collected information on several of the residences located there in 1876. A majority of this information was provided by Mrs. Elinor Black, who lives in the vicinity and serves as Vice President of the Gainsborough Chapter of the West Lincoln Historical Society; this society is currently researching a book on the history of this township. Mrs. Black has collected photographs of some of these residences. She has also confirmed the

presence and location of some of them on 1795 and 1811 maps housed at the Public Archives in Toronto and on an 1862 map drawn by Mr. Tremaine housed in the Special Collections Room of the Brock University Library, St. Catherines.

AgGv-7 is the J.S. Robins/Ashton House. It was located adjacent to the east side of Regional Road 16 in the centre on the north half of Lot 5, Concession 1. It is shown on the map of Gainsborough Township in the Historical Atlas of Lincoln and Welland Counties (1876), on property owned in 1876 by J.S. Robins. After 1876 it was occupied by the Ashton family, a descendant of which now resides in Dunnville. The house was a two-storey wooden frame structure which was torn down within the last twenty years. A small shed now stands where, or just west of where, the original house once stood. North of the house location is a laneway, and north of the laneway there is a pond. A barn still stands east of the pond. The area where the house stood, now north, east, and south of the shed, was ploughed and the Museum collected a number of historic artifacts, including fragments of crockery, glass, and china.

AgGv-12 was a pre-1876 house. It was located on the south side of Elcho Road West, just east of the Elcho Church and Cemetery. Its location is shown on the 1876 township map, but this map does not provide the name of its occupants. Local residents remember a house and barn standing at this location, that the house was moved elsewhere, and that the barn was torn down. The location of the house and barn remain visible in a cultivated field today by a scatter of bricks and historic material. The Museum collected a number of historic artifacts from this location, including crockery, glass, and china fragments.

AgGv-35 is the E. Vaughan log cabin. The Vaughan family were among the first settlers in Gainsborough Township in the 1820s-1830s, and E. Vaughan built a log cabin near the northeast corner of the southeast quarter of Lot 6, Concession 1, on the west side of Krick Road. This log cabin was apparently built on a stone foundation, the remains of which were visible in the 1940s and 1950s. Several local residents knew the location of this log cabin since

crockery, glass, and china fragments were visible on the surface of the cultivated field that now occupies this location. The Museum collected a number of historic artifacts from this location, including crockery, glass, and china fragments. Mrs. Black informed the Museum that after 1876, this house was occupied by the Fred Bartwell family, a descendant of which still lives in the vicinity.

The above three historic sites (AgGv-7, AgGv-12, and AgGv-35) represented the only three residences shown on the 1876 township map which the Museum confirmed through archaeological fieldwork (i.e., historic material was collected and the sites have been registered with the Ministry of Citizenship and Culture).

A fourth historic residence shown on the 1876 township map was also confirmed, but no material was collected from it, and it has not been registered. This was the residence of F.L. Smith in 1876, located on the north side of Zumstein Road, on the southwest corner of Lot 6, Concession 1. During a survey of the cultivated field in this area, the Museum observed a scatter of historic material, but since this material appeared to date after A.D. 1900 (i.e., it included plastic, rubber, metal, and leather fragments), it was not collected. It was only after the fieldwork was completed that the Museum discovered, through archival research, that a house stood in this location in 1876. It is probable that some of the historic material in this location dates to 1876 or earlier, and this site should be futher investigated in the future.

The remaining residences shown on the 1876 township map were not confirmed through archaeological investigation, but information on them was collected. The Museum also collected information on historic structures located on LF-3C but not shown on the 1876 township map. These are discussed below.

A store/post office/residence stood on the northwest corner of LF-3C, on the southeast corner of the intersection of Elcho Road West and Regional Road

16. This structure is shown on the 1876 township map, designated "P.O." for post office. It was two-storey wooden frame building which housed on the ground level a store and post office and on the second level a residence. The post office operated between 1874 and 1913 and Mr. D. Sensabough was the first postmaster. The post office was transferred elsewhere in 1913, but the store remained operational until the entire structure was destroyed by fire in the 1920s. Subsequently, a house was built on the same property, and this house remains standing today. Its occupants, Mr. and Mrs. George Baarda, have an old bottle which may relate to the earlier building on this property.

The 1876 township map shows another structure on the east side of Regional Road 16, located just southeast of the store/post office. This structure had a varied history, being used as a residence but also as a place of business. It served as a store, possibly before the store/post office described above (i.e., prior to 1874), then as a seed-cleaning business operated first by Mr. Miller and later by Mr. Will Krick, and was then converted by Mr. Krick to a tailor shop. This structure is not standing today, and it is not known when it was destroyed. Its former location is now occupied by pasture, and no trace of it remains visible on the surface.

The 1876 township map shows the residence of H. Frank located on the south side of Beaver Creek midway between the store/post office and the Elcho Church. No other details of this structure were obtained. It is not standing today and the area it occupied is covered in pasture.

Another residence is shown on the 1876 township map without the name of its occupants. It was located on the east side of Regional Road 16 south of the Robins/Ashton House. No other details on this house were obtained. The area it occupied is today covered in pasture.

A pre-1876 house stood at the northeast corner of the intersection of Regional Road 16 and Zumstein Road (southwest corner of LF-3C). In 1876 it was occupied by Wm. Baldwin. The location of this house is the same as a house standing today occupied by the Wisniewski family. It is believed that

the current house at this location relates to the 1876 Baldwin house and it is therefore treated as a standing residence. It is therefore excluded from the Museum's analysis and it was documented by Historica Research Ltd.

The pre-1876 residence of J.C. Depotty stood on the north side of Zumstein Road, near the southeast corner of Lot 5, Concession 1. This area was covered in pasture at the time of the Museum's fieldwork, and no trace of this house was visible on the surface.

The 1876 residence of I. Comfort is shown on the 1876 township map, located on the south side of Elcho Road West, west of Krick Road. Ithemar Comfort was the first settler on LF-3C, purchasing from the Crown in the early 1800s the 200 acre (80 ha) block of land at the north end of Lot 6, Concession 1. His property was bordered on the north by Elcho Road West and on the east by Krick Road and was crossed by Beaver Creek. He built a log cabin prior to 1836 on the south side of Beaver Creek, near the centre of his property. The precise location of this log cabin is known to local residents since this area was at one time ploughed, and traces of its existence were visible on the surface. At the time of the Museum's fieldwork, this area was covered in pasture and no traces of the log cabin could be seen.

Prior to 1876, this log cabin was torn down and Ithemar Comfort's son, also named Ithemar, constructed another log cabin on the north side of Beaver Creek, adjacent to the south side of Elcho Road West. This structure is the one shown on the 1876 township map, but it is not standing today. Once again, local residents knew of its location, and informed the Museum that it was south-southwest of a shed now standing beside the current house on this property (owned by Mr. Loyal Krick, rented to Mr. Philip Davis). There was also reported to be a dug well beside the log cabin, now filled in. This area was covered in thick weeds and bushes and was not investigated by the Museum. Mrs. Black has a photograph of this log cabin.

The 1876 township map shows the residence of John Garner on the east side of Krick Road, just south of Beaver Creek. Mrs. Black has a photograph of

this residence, which was a log cabin. She believes a portion of the original log cabin remains standing today as a shed, although the exterior has since been modified. This shed is standing southeast of the current house on this property, today occupied by the Krahne family. It is therefore excluded from the Museum's analysis.

The final structure shown on the 1876 township map was the residence of E. Vaughan on the south side of Elcho Road east of Krick Road (north half of Lot 7, Concession 1). It is believed that this structure remains standing today as the residence of Mr. John Swayze; it is therefore excluded from the Museum's analysis.

E.4 Historic Sites in the Vicinity

Circa 1876 the village of Elcho was a thriving rural community, but little evidence of that remains today. In section E.3 above we have described structures within this village that were located on the candidate site, including the Elcho Church and Cemetery, a store/post office/residence, a store/seed-cleaning business/tailor shop/residence, and other residences. There were other structures in the village not located on the candidate site; these are described below.

A pre-1876 residence stood on the northeast corner of the intersection of Elcho Road West and Regional Road 16. The 1876 township map indicates the property on which this house stood was owned by J. Bowman. Local residents informed the Museum that this house was at one time used as the parsonage for the Elcho Church. It is not standing today.

Mrs. Black informed the Museum that at one time there were two blacksmith shops on the west side of Regional Road 16. One of these was opposite that store/post office/residence and was operated by Mr. Putnam. The other was opposite the Robins/Ashton House and was operated by Mr. Durham. Neither of these are shown on the 1876 township map, and neither are standing today.

Beyond the village of Elcho there were a number of historic structures. One of these was a school, located adjacent to the northeast corner of LF-3C, on the south side of Elcho Road West. This school is shown on the 1876 township map and is standing today, converted to a residence.

The Zumstein family were among the first settlers of Gainsborough Township. The original Zumstein residence on the southeast corner of Lot 6, Concession 2 was a log cabin, located beside the current barn on the Century Farm at this location. Mrs. Black has a photograph of this cabin from the late 1800s. It was on the north side of Elcho Road West, directly opposite the second Ithemar Comfort house. One of the residents living on or in the vicinity of LF-3C reported that a cemetery is located on the Zumstein property. This could be a private, pioneer cemetery.

Another Comfort family built a log house on the east side of Krick Road, just south of the former channel of the Welland River (Chippewa Creek) on Lot 7, B.F. Concession. This house was built prior to 1852, was occupied in 1876 by Mr. Oscar Clark, and is owned today by the Peaire Brothers although it is occupied by Dr. Ullman. It is designated as a Century Farm. Mrs. Black has a photograph of this house from the late 1800s.

A large store once stood on Lot 7, B.F. Concession, at the end of Krick Road (south of Canborough Road and north of the Welland River). It was established prior to the first store in Elcho, and also served for a short time as a post office. Mrs. Black had a store ledger which indicated the names of local residents who purchased goods at this store, and listed the items sold; these included produce, dry goods, hardware, hay, and railway ties.

A log structure on the southwest corner of Lot 9, Concession 2, served as the Episcopal Methodist Meeting Place after 1836. Mr. George McPherson later built a house on or near this place, and its location is shown on the 1876 township map. Neither the meeting place or the McPherson house are standing today, and the location is currently pasture.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

The following archaeological resources are considered to be significant:

- AgGv-2
- AgGv-5
- AgGv-9
- AgGv-11
- AgGv-18
- AgGv-19
- AgGv-22
- AgGv-24
- AgGv-25
- AgGv-26
- AgGv-29
- AgGv-37
- AgGv-39
- AgGv-40
- AgGv-41
- AgGv-42
- the pre-1876 Elcho store/post office
- the pre-1876 store/seed-cleaning business/tailor shop
- I. Comfort's first log cabin (circa 1836)
- I. Comfort's second log cabin (circa 1876)
- AgGv-35 (E. Vaughan's log cabin west of Krick Road, circa 1830s)

4.7 CANDIDATE SITE LF-9C

A. LOCATION

The candidate site proper is located on Lot 18 and Part of Lot 17, Concession 3, Township of West Lincoln, Regional Municipality of Niagara; formerly in the

Township of Gainsborough, Lincoln County. It is bordered on the north by Highway 20, on the east by Schram Road, on the south by Vaughan Road, and on the west by an arbitrary line located in the approximate centre of Lot 17.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Exisiting Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were no known archaeological sites on the candidate site.

B.2 Known Archaeological Sites In the Vicinity

There were at least seven known or reported archaeological sites south of LF-9C, all located along the north bank of the Welland River. These are:

AgGu-5	Woodland camp
AgGu-22	Late Archaic to Late Woodland camp
AgGu-23	Late Archaic camp
AgGu-996	(unconfirmed) Indeterminate findspot
AgGu-997	(unconfirmed) Late Archaic/Early Woodland camp
AgGu-998	(unconfirmed) Late Archaic camp
AgGu-999	(unconfirmed) Late Archaic camp

B.3 Known Historic Sites On the Candidate Site

The following structures were located on the candidate site in 1876, as known from the map of Gainsborough Township in the Historical Atlas of Lincoln and Welland Counties (1876):

-the residence of N. Hartwell, a hub manufacturer;
-the residences of J. Schram, Israel Dawdy, D. McKiddie, C.O. Beamer, and

T. Phillips.

B.4 Known Historic Sites In the Vicinity

There were two historic structures adjacent to the candidate site: a church on the southeast corner of the intersection of Hwy. 20 and Schram Road, and a school on the northeast corner of the intersection of Vaughan Road East and Schram Road.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 10% of the lands within LF-9C were initially designated as having a high potential for the future discovery of archaeological sites due to the presence of a small tributary of the Welland River in the southeast corner. This tributary is the only watercourse shown on the 1:50 000 topographic map, and was the only one used in Phase 3B to calculate area of land with a high archaeological potential. The 1:10 000 topographic base maps used in Phase 4A show one additional watercourse, a tributary of the Welland River, running through the candidate site. This results in a revision of the area of high archaeological potential from 10% to 50%.

D. AREA SURVEYED

Approximately 20 ha or 15% of LF-9C were surveyed, consisting of one corn field and one plougned field. All other lands on LF-9C were covered in pasture, hay, or woodlot. Surface visibility in the fields surveyed was good.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

Four archaeological sites were discovered:

AgGu-25 Indeterminate camp (10 chert flakes and 1 chert core)

These artifacts were found in a corn field on the property of Mr. Ype Flameling, who reported on his questionnaire that he had found an arrowhead. When interviewed, Mr. Flameling said he had found one arrowhead and that his son had found one arrowhead, in the same location as the site (AgGu-25) discovered by the Museum. Mr. Flameling's arrowhead was photographed. It is a Brewerton Corner-Notched projectile point type, Late Archaic period circa 2500 B.C. Mr. Flameling said that the arrowhead his son found was similar; it was in his son's possession, and the Museum could not locate his son to photograph his arrowhead.

The other three sites found on LF-9C were as follows:

AgGu-26	Early Woodland (circa 900-400 B.C) findspot (Meadowood cache blade)
AgGu-27	Indeterminate findspot (7 chert flakes)
AgGu-28	Early Archaic (circa 8000-7500 B.C.) findspot (Nettling projectile point and 1 chert flake)

E.2 Archaeological Sites in the Vicinity

The following information on archaeological sites in the vicinity was collected.

Mrs. P. Maylott, who occupies the school house converted to a residence on the northeast corner of Vaughan Road East and Schram Road (see section E.3 below) reported on her questionnaire that an arrowhead had been found on her property (adjacent to the southeast corner of LF-9C). The Museum interviewed Mrs. Maylott and discovered that she had not found an arrowhead, but rather a ground stone celt. This is a woodworking tool, made of course-grained schist that is polished from use on the tip and along the entire length of its lateral sides. This object is approximately 8 cm long (broken) and 2 cm wide.

Mr. Clarence Beamer, who occupies the first farmhouse east of LF-9C on

the south side of Hwy. 20, reported on his questionnaire that arrowheads had been found in the fields on his farm. The Museum visited Mr. Beamer, and he said that over the years he had collected about 25 arrowheads, but he was unable to find them for the Museum to photograph.

Mr. Peter Schuender, who occupies the first farmhouse south of LF-9C on the east side of Heaslip Road, reported on his questionnaire that he had found a stone axe on his farm. The Museum visited the Schuender residence and Mrs. Schuender confirmed that a stone axe had been found, but was unable to locate it for the Museum to document and photograph.

Mr. Eric Weiss was interviewed, even though he lives beyond the 2 km study area defined for the site vicinity, because he was the only person the Museum was aware of who had information of archaeological sites in the vicinity. He has a large collection of Indian artifacts, several of which he found on land he farms east and south of his house in Gainsborough Township, approximately 2.5 km north of Hwy. 20 on the east side of Silverdale Road. The artifacts he found on this land include a number of Late Archaic period (circa 2500-1000 B.C.) projectile points typed as Brewerton Corner-Notched, Brewerton Side-Notched, Lamoka, and Genesee, as well as chert bifaces, drills, scrapers and knives, and ground stone celts.

Mr. Weiss also informed the Museum that he had found artifacts and a Native burial on another archaeological site between St. Anns and Smithville, 7 km northwest of LF-9C. He said he had found a bannerstone, stone beads, pottery, and ceramic pipes at this location. The Museum photographed some of these artifacts.

E.3 Historic Sites On the Candidate Site

One historic site (AgGu-29) was discovered on the candidate site. The site consisted of only one artifact, a fragment of white-glazed china, found in an area of pasture adjacent to the west side of Schram Road. It was registered as a site (AgGu-26) since its location coincides with the location of the

pre-1876 residence of Israel Dawdy. Mr. Clarence Beamer informed the Museum that he remembered a house standing at this location in the 1920s, but no evidence of this house remains visible on the surface today.

The following information on structures standing on LF-9C in 1876, as known from the map of Gainsborough Township in the Historical Atlas of Lincoln and Welland Counties, was collected.

The residence of N. Hartwell, a hub manufacturer in 1876, is not standing today, although an old barn is standing in the location of the house in 1876 (along the southern edge of LF-9C, on the north side of Vaughan Road East, opposite the T-intersection of Heaslip Road and Vaughan Road East). A local resident, Mrs. Pauline Young, informed us that a stone foundation remains visible near this barn. However, the Museum's investigation did not discover a stone foundation in the area around the barn; rather, it was observed that the barn stood on a stone foundation. This foundation may be related to N. Hartwell's 1876 house. No artifacts were found around the barn; this area was covered in weeds, bushes, shurbs, and pasture.

There are no structures standing today in or near the vicinity of the 1876 residence of J. Schram.

There are structures standing today in the same locations as the 1876 residences of D. McKiddie and C.O. Beamer. Houses at these locations are occupied today by Mr. J. Melon and a tenant on the Morningstar Brothers farm respectively, and it is believed that the present structures relate to the pre-1876 ones. It is probable that the McKiddie house (now occupied by Mr. J. Melon) once served as the manse for the church located adjacent to the northeast corner of LF-9C (see section E.4 below). Both of these structures are excluded from the Museum's analysis.

The present day farmhouse of Mr. Ype Flameling stands in the same location as the 1876 residence of T. Phillips. It is believed the current house may be, in part, the original one on this property and it is therefore

excluded from the Museum's analysis.

Mrs. Helen Kszan informed the Museum that a blacksmith shop once stood adjacent to the west side of Schram Road approximately halfway between Hwy. 20 and Vaughan Road East. This area was covered in pasture and was not investigated by the Museum.

E.4 Historic Sites in the Vicinity

The following information on historic sites in the vicinity of LF-9C was collected.

The present residence of Mr. and Mrs. P. Maylott, at the northeast corner of the intersection of Vaughan Road East and Schram Road (adjacent to the southeast corner of LF-9C) is a brick school house converted to a residence. A stone plaque on the front of this building indicated it was constructed in 1883. However, Mrs. Maylott informed the Museum that a log school house stood in this same location prior to 1883. The map of Gainsborough Township in the Historical Atlas of Lincoln and Welland Counties (1876) indicates a school in this location in 1876. Mrs. Maylott provided the Museum with the name of a lady who organized reunions for former pupils of this school, referred to locally as "Schram's School". The Museum wrote to Mrs. Zeta Bartlett, who informed us that she knew a log structure existed there prior to 1883, but she could not provide any other details on it.

The church shown on the 1876 township map at the southeast corner of the intersection of Hwy. 20 and Schram Road (adjacent to the northeast corner of LF-9C) remains standing today, but it is no longer used as a church; rather, a sign on the front of this structure reads "Book's Garage". Mrs. Pauline Young informed the Museum that this was a Methodist Church, known as the "Centenary Church", built prior to 1876 but converted to a house in 1926. The original roof was replaced after 1926 by Mr. Harold Book, and this structure later became a garage. According to Mrs. Young, the manse for the church was located in the northeast corner of LF-9C. It is believed this manse is the

same residence shown on the 1876 township map as being occupied by D. McKiddie, today occupied by Mr. J. Melon.

Mrs. Young and Mr. Eric Weiss provided the Museum with information on Silverdale Station, a cluster of historic buildings located on Silverdale Road in association with the railway which crosses Silverdale Road 1.7 km north of LF-9C. This railway originally consisted of two tracks constructed after 1876, but remains today as a single line of the Toronto, Hamilton, and Buffalo Railway. There were at least five buildings, a telegraph line, and a spur railway line at Silverdale Station, none of which remain standing today. The buildings were a railway station, a store/post office, a barn or shed, a creamery, and a blacksmith shop. The approximate locations of the first four of these buildings are shown on a sketch map (in Appendix E), compiled from photographs and information provided by Mrs. Young; the precise location of the blacksmith shop could not be determined.

The railway station stood south of the double railway line but north of a spur line. There was a loading platform on the spur line, adjacent to the east side of Silverdale Road. There was a telegraph line along the south side of the double rail line, north of the station. The station building stood in this location until the 1940s or 1950s, at which time it was moved to Hilltop on Hwy. 20, where it remains in use today as a cycle shop.

The store was on the east side of Silverdale Road, south of the station. It was a two-storey wooden frame structure with the "Silverdale Co-Operative Store" and post office on the ground floor and residence on the second floor. A barn or shed was located southeast of this structure. The store/post office burnt down in the 1930s.

The Pure Milk Company Creamery was located on the west side of Silverdale Road, south of the railway tracks. It was a large two-storey wooden structure with a loading platform along the east side (facing Silverdale Road) and with exterior staircases leading to two apartments on the second floor.

The blacksmith shop stood south of the store/post office on the east side of Silverdale Road.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

The following archaeological resources are considered to be significant:

- AgGu-25
- the pre-1876 residence of N. Hartwell

In addition, the reported blacksmith shop would be significant if its presence could be confirmed through archaeological investigation, but the Museum's research to date has not yet provided this confirmation. Until such times as this blacksmith shop can be confirmed, it is considered to be a significant archaeological resource.

4.8 CANDIDATE SITE LF-1E

A. LOCATION

The candidate site proper is located on Lots 5, 6, and 7, Concessions 2 and 3, City of Niagara Falls, Regional Municipality of Niagara; formerly in the Township of Crowland, Lincoln County. It is bordered on the north by Carl Road, on the east by Crowland Avenue, on the south by Schisler Road (Regional Road 27), and on the west by the Conrail Railway. Morris Road runs north to south through the candidate site.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Existing Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were no known archaeological sites on the candidate site.

B.2 Known Archaeological Sites In the Vicinity

There was one known archaeological site in the vicinity:

MW742 Archaic camp

B.3 Known Historic Sites On the Candidate Sites

The following historic sites were located on the candidate site in 1876, as known from the map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876):

The residence and business of Jacob L. Dell Esq., a farmer, shoemaker, cooper and township councillor.

The residences of O. Young, A. Misener, C. Everingham, M. Quinlan, D. Collens, C. and E. Piper, J. Sibbet, and Geo. Pearson.

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity, including the village of Cook's Mills (formerly Crowland or Dean's Mills), two schools, two churches, and a cemetery.

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 20% of the lands within LF-1E were designated as having a high potential for the future discovery of archaeological sites due to the presence of two tributaries of Lyon's Creek.

D. AREA SURVEYED

A total of 49 ha or 18% of LF-1E were surveyed, including fields that were ploughed and covered in standing corn. In addition, a dirt horse track was surveyed. Surface visibility was good to excellent on all areas surveyed.

E. RESULTS

E.1 Archaeological Sites On the Candidate Site

The following archaeological sites were discovered on LF-1E:

AgGs-7	Indeterminate findspot (1 utilized chert flake)
AgGs-8	Indeterminate findspot (1 chert flake)
AgGs-9	Indeterminate findspot (1 biface fragment)
AgGs-10	Indeterminate camp (1 utilized chert flake and 29 chert flakes)
AgGs-11	Indeterminate camp (1 utilized chert flake, 2 chert cores, and 15 chert flakes)
AgGs-12	Indeterminate findspot (1 chert core and 3 chert flakes)
AgGs-13	Indeterminate findspot (1 chert flake)
AgGs-30	Indeterminate findspot (1 chert scraper and 1 chert flake)
AgGs-31	Indeterminate findspot (1 chert biface fragment)
AgGs-32	Indeterminate camp (68 chert flakes, 1 utilized chert flake, and 3 chert cores)

In addition, Mr. Thomas Cowan reported finding two arrowheads and a "stone grinding tool". The Museum interviewed Mr. Cowan, who said these artifacts had been found on the dirt horse track north of his house on Morris Road (near the centre of LF-1E). The Museum surveyed this track, but did not recover any archaeological material. The three artifacts found by Mr. Cowan were photographed. One is a Meadowood projectile point (Early Woodland period circa 900-400 B.C.), one is a chert biface, and the third is a ground stone tool. Although the latter object is shaped like a celt, it has hammering

use-wear on both ends and could have been used as a hammerstone.

Mr. Ivan Mamchych reported that he had found an arrowhead and a stone axe on his farm on the southwest corner of LF-1E. When interviewed, he said he had given these artifacts to Mr. Alvin Chambers in Cook's Mills. He could not recall precisely where on his farm these had been found. The Museum surveyed most of the land on this farm, and discovered archaeological sites AgGs-7, AgGs-8, and AgGs-32. It is probable that the artifacts found by Mr. Mamchych came from one of these sites.

E.2 Archaeological Sites In the Vicinity

A number of local residents reported on their questionnaires that arrowheads and other artifacts had been found in the vicinity. Several of these residents, when interviewed by the Museum, mentioned Mr. Alvin Chambers of Cook's Mills. Mr. Chambers was interviewed and the Museum examined his collection of artifacts. He said that he had found or had been given artifacts from throughout Crowland Township, but he could not recall any artifacts that were specifically found on candidate site LF-1E. He said a majority of his collection was obtained from two sites. One of these was the archaeological site noted in Section B.2 above, MW742, recorded by Marion White. It was located on a high knoll overlooking Lyon's Creek near the bridge on the first road west of Morris Road. This site was also known to several other local residents, and all said that artifacts could no longer be found there since the knoll containing the site had been removed to obtain fill for the construction of Schisler Road and the tunnel under the Welland Canal.

The second archaeological site known to Mr. Chambers is located on the south side of Lyon's Creek just east of Cook's Mills. (This location also contains a historic site, discussed in section E.4 below.)

Mr. J. Morris owns a 40 ha farm on the north side of Young Road, east of Crowland Ave., adjacent to the eastern boundary of LF-1E. He has a collection

of five arrowheads from this farm and from a field he cultivated on the south side of Young Road, opposite his house and barn. His son, who currently resides in Sudbury, has a larger collection of artifacts from these locations, including more arrowheads, "tomahawks" and "skinning stones". Mr. J. Morris's collection of five arrowheads was photographed. These are all assigned to the Late Archaic period, circa 2500-1000 B.C., and include Lamoka, Genesee, and Brewerton Corner-Notched types.

Mr. G.W. Morris, who lives on the north side on Schisler Road just east of LF-1E, has a collection of artifacts. Most of these were apparently found on site MW742, but some may have been found on the G.W. Morris farm, adjacent to LF-1E. These were photographed, and include a celt and seven projectile points. The points include ones typed as Brewerton Eared and Brewerton Corner-Notched, both dating to the Late Archaic period, circa 2500-1000 B.C., consistent with Marion White's interpretation of site MW742 as Late Archaic and in agreement with the artifacts recovered by Mr. Alvin Chambers from that site. Mr. G.W. Morris's collection also contains two Early Archaic projectile point types, Stanly Stemmed and Le Croy Bifurcate Base, dating circa 6000-5000 B.C. This raises the possiblity that archaeological site MW742 contains at least two components, one Early Archaic and one Late Archaic. However, we cannot be certain of this since these Early Archaic points may have been found on the farm of Mr. G.W. Morris.

Mr. Carl Poirier reported that a single arrowhead had been found in a ploughed field north of his house on Schisler Road, within 100 metres of the western boundary of LF-1E. He no longer had this arrowhead in his possession.

Mr. J. Majoros, who lives on Young Road west of LF-1E, reported that he had found arrowheads on property he farms west of Matthew Road and also from the archaeological site just east of Cook's Mills reported by Mr. Alvin Chambers.

Mrs. Wanda Cowan, who lives in the house at the northeast corner of Morris Road and Carl Road, reported that arrowheads had been found along

Misener Road east of LF-1E.

E.3 Historic Sites On the Candidate Site

The Museum discovered one historic site on LF-1E, registered as AgGs-29. It is believed that this site was the pre-1876 residence of C. Everingham as shown on the map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876). The Museum was informed of this site by Mrs. Wanda Cowan, who said that a log cabin stood at this location until it burnt down in the 1960s or early 1970s. The Museum was taken to this location by Mrs. Cowan. A gateway through the fence along the south side of Carl Road remains visible today, as does the earthen platform upon which the log cabin was built. A well is located near the southeast corner of this platform. Traces of charcoal are visible on and surrounding the platform. A small quantity of historic material, including china, glass, and crockery fragments, was collected.

The original residence of Jacob L. Dell, shown on the map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876), is no longer standing, having been replaced by a more recent house now occupied by the Silverthorn family. Mr. J. Morris, a long time resident of the area, remembers that there was a log cabin at this location. He also knew that the log cabin had been occupied by Jacob Lemon Dell.

There are no structures standing today in or near the locations of the 1876 residences of M. Quinlan, C. and E. Piper, or Geo. Pearson. The locations of these three houses were covered in pasture at the time of the Museum's fieldwork and were not investigated.

The farmhouse standing today at the northwest corner of Young Road and Morris Road is the original residence of J. Sibbet, who occupied this corner in 1876. This structure is therefore excluded from the Museum's analysis.

The house standing today on the north side of Young Road midway between

Morris Road and Crowland Ave. is in the same location as one occupied in 1876 by O. Collens, but it is not known if the current structure relates to the original one.

The 1876 residence of O. Young on the south side of Carl Road, west of Morris Road (just west of Frontier Auto Dismantlers) stood until about 1970, but was torn down. After 1970, a house was moved to the location of where O. Young's house stood.

Mrs. Wanda Cowan knew that a house once stood on the southeast corner of this intersection of Carl Road and Morris Road. This was the residence of A. Misener in 1876. This location was covered in pasture and was not investigated by the Museum.

Mrs. Cowan also said that, according to the local legend, there were Indian trails through LF-1E, at least one of which was marked by three large trees. A sketch map of Crowland Township in Centennial Yearbook: History of Crowland Township (Blanche 1967:76) shows two "Indian Trails" cross-cutting each other in the vicinity of LF-1E. One trail originated at "Lyon's Creek Settlement" southeast of LF-1E and ran in a northwesterly direction to Port Robinson. The other ran in a northeasterly direction across Lyon's Creek, through LF-1E to the Welland River. A third "Indian Trail" ran along the north and west side of Lyon's Creek from west of Cook's Mills to Chippewa. The latter trail may have cut through the southern portion of LF-1E, or it may have led to the construction of Lyon's Creek Road in its present location south of LF-1E.

E.4 Historic Sites in the Vicinity

The school that in 1876 was located at the southeast corner of the intersection of Lyon's Creek Road and Crowland Ave. is no longer standing today.

Several local residents believe that lands within and adjacent to LF-1E

may hold some significance from events that transpired during the War of 1812-1814. It is a well known historical fact that an important battle was fought at Cook's Mills on October 19, 1814. This battle is commemorated by a provincial historical plaque in Cook's Mills, located on the north side of Lyon's Creek Road at the eastern end of the village. It reads as follows:

Battle of Cook's Mills

> "In October 1814, an American army advanced from Fort Erie toward the British line along the Chippawa River. Lieutenant-General Drummond ordered a reconnaissance toward Cook's Mills on his right flank in hopes of finding the American's vulnerable to attack. On the 19th a heavy skirmish took place involving men of the Glengarry Light Infantry, and the 82nd, 100th and 104th Regiments, supported by gun and rockets. The British-Canadian Force withdrew, but the Americans abandoned Cook's Mills the following day and on the 21st joined the general retreat to Fort Erie."

Mr. Alvin Chambers of Cook's Mills informed the Museum that he knows of the precise location of the battle, and also the location where slain American soldiers are buried. This is the same location as an archaeological site he has collected material from. It is generally believed that troop movements on both the American and British-Canadian sides traversed the area of LF-1E before and after this battle, which was the last major skirmish of this war on the Niagara frontier.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

The following archaeological resources on LF-1E are considered to be significant:

- AgGs-10
- AgGs-11
- AgGs-32
- the pre-1876 residence of Jacob L. Dell

4.9 CANDIDATE SITE PI-27E

A. LOCATION

The candidate site proper is located on Part of Lots 1, 2, 3, and 4, B.F. Concession, Welland River, City of Niagara Falls, Regional Municipality of Niagara; formerly in the Township of Crowland, Lincoln County. It is bordered on the north by Grassy Brook Road, on the east by Montrose Road, on the south by Biggar Road (Regional Road 47), and on the west by Crowland Avenue.

B. PRIOR KNOWLEDGE OF ARCHAEOLOGICAL RESOURCES ON AND IN THE VICINITY OF THE CANDIDATE SITE (Exisiting Environment)

Research conducted during Phase 3B determined the following:

B.1 Known Archaeological Sites On the Candidate Site

There were three known or reported archaeological sites directly adjacent to the candidate site and thought to extend onto the candidate site:

AgGs-999	Archaic/Early Woodland camp (unconfirmed report of projectile points)
MW983	Archaic camp
MW991	Late Archaic camp

B.2 Known Archaeological Sites In the Vicinity

The following known archaeological sites were located in the vicinity:

AgGs-4	Late Archaic/Early Woodland camp
AgGs-5	Late Archaic/Early Woodland camp
MW987	Archaic camp
MW990	Possible Archaic camp
MW992	Archaic camp

MW993 Archaic camp

B.3 Known Historic Sites On the Candidate Site

The following historic sites were located on the candidate site in 1876, as known from the map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876):

A church in the southwest corner of PI-27E (southwest corner of Lot 4, B.F. Concession, Crowland Township).

The residences of Thomas Dell, Harvey Burns, and T. Wilkins.

Misener Road which is not open today but in 1876 it extended north to south through the centre of PI-27E from Grassy Brook Road to Biggar Road.

B.4 Known Historic Sites In the Vicinity

There were a number of historic sites in the vicinity, including the village of Montrose, the Montrose Bridge over the Welland River, a hotel at the southwest corner of the Montrose Bridge, and a school near the southwest corner of PI-27E (northwest corner of Lot 4, Concession 1, Crowland Township).

C. ARCHAEOLOGICAL POTENTIAL OF THE CANDIDATE SITE

Approximately 80% of the lands within PI-27E were designated as having a high potential for the future discovery of archaeological sites due to the presence of Grassy Brook which cuts across the northern half of the candidate site, the presence of a tributary of Lyon's Creek which cuts across the southern half of the candidate site, and the proximity of the candidate site to the Welland River.

D. AREAS SURVEYED

A total of 66 ha or 35% of PI-27E were surveyed, including fields that were ploughed, covered in standing corn, or covered in corn stubble. Surface visibility was excellent for the ploughed fields, excellent to good for fields covered in standing corn, and good to poor for fields covered in corn stubble.

E. RESULTS

E.1 Archaeological Sites on the Candidate Site

E.1.A Previously Known Archaeological Sites:

The three previously known archaeological sites mentioned in section B.1 above as being located directly adjacent to the candidate site and thought to extend onto the candidate site were re-located by the Museum in 1984. Each of these are discussed below:

AgGs-999

AgGs-999 was an unconfirmed report of projectile points found towards the eastern end of B.F. Concession, Crowland Township (Ellis 1979:66). These projectile points included ones typed as Brewerton-Eared and Lamoka, both assigned to the Late Archaic period circa 2500-2000 B.C. This site was not investigated by Ellis (1979), so its precise location and extent could not be determined for the Museum's background research in Phase 3. The Museum's Phase 4A survey of the location where this site was reported by Ellis (1979) (and also reported by local residents), resulted in the discovery of two distinct archaeological camp sites, neither of which extend onto the candidate site. Both were located in a cultivated field on the north side of Grassy Brook Road (which forms the northern boundary of candidate site PI-27E). In addition, the Museum discovered an isolated artifact in the same field.

The isolated artifact, registered as AgGs-28, consisted of one utilized chert flake.

One of the archaeological camp sites, AgGs-27, consisted of 119 chert flakes, 4 utilized chert flakes, and 2 chert cores.

The other camp site, AgGs-20, consisted of 168 chert flakes, 3 utilized chert flakes, 1 chert core, 1 projectile point fragment which could not be typed or assigned a cultural affiliation, and 1 projectile point fragment of the Lamoka type (Late Archaic period circa 2500-2000 B.C.). The latter projectile point is the same type as some of those reported by Ellis (1979:66) from this location.

We conclude that, several years ago, someone collected artifacts from this location and that these artifacts were subsequently documented by Ellis (1979). Our survey indicated that this archaeological site, AgGs-999, is in fact two distinct archaeological camp sites which we have registered and mapped as AgGs-20 and AgGs-27. These two sites lie in close proximity to each other, but are separated from each other on the basis of topography and the surface distribution of artifacts. Each occurs on a distinct knoll, with the two knolls separated by a small gulley which develops into a minor tributary of the Welland River. The distribution of artifacts on each site was confined to the knoll area, and there were no artifacts found between the knolls where the gulley is located. The third site in this area, AgGs-28, was a single utilized chert flake and is interpreted as an isolated find, probably related to the occupation of AgGs-20 and AgGs-27. Although both AgGs-20 and AgGs-27 are significant archaeological sites, they lie well north of the candidate site and do not extend onto the candidate site.

MW988

This archaeological site was reported by Marion White as being an Archaic camp located on B.F. Concession, Crowland Township. She stated that artifacts were found in three locations, the first of which was 100 metres south of the Welland River but north of Grassy Brook Road, while the other two were west of the first.

The indefinite site location, as given by Marion White, led to the conclusion that it could extend south across Grassy Brook Road onto candidate site PI-27E.

A local resident, Mr. Harold Warner, knew that artifacts had been recovered at this location. Mr. Warner collected material from this site, including a projectile point typed as Brewerton Corner-Notched (Late Archaic period circa 2500-2000 B.C.) which the museum photographed, and about 30 chert flakes. Based on information provided by Mr. Warner, it was determined that this site lies adjacent to the Welland River and does not extend south across Grassy Brook Road onto candidate site PI-27E.

MW991

This site was reported by Marion White as being an Archaic camp located on B.F. Concession, Crowland Township. She stated that artifacts were found in two areas, separated from each other by a small ravine. It was thought that the second area might extend onto PI-27E. Artifacts recovered by Marion White included stemmed and corner-notched projectile points dating to the Late Archaic period.

The Museum re-located this archaeological site in 1984. It has been mapped and registered as AgGs-14. Artifacts were recovered from two adjacent knolls that were separated from each other by a small gully as Marion White had described. However, artifacts were found in the gully between the two knolls, so all artifacts were considered to be from a single large camp site. Artifacts from the easternmost area extend to within 20 metres of PI-27E, but the main concentration of artifacts was 80 metres to the west. Therefore, it is concluded that this site does not extend onto PI-27E.

Artifacts recovered from this site by the Museum included 232 chert flakes, 22 utilized chert flakes, 6 chert cores, 10 chert bifaces, 1 sandstone abrader, 1 ground stone fragment, and 7 projectile points. Six of these

points are typed as Lamoka while the seventh is Brewerton Side-Notched. Both of these types are assigned to the Late Archaic period circa 2500-2000 B.C., consistent with Marion White's discoveries at this location.

E.1.B Additional Archaeological Sites Discovered:

The Museum's survey of available lands on PI-27E resulted in the discovery of 13 archaeological sites, listed below:

AgGs-15	Indeterminate findspot (1 utilized chert flake)
AgGs-16	Indeterminate findspot (1 chert flake)
AgGs-17	Indeterminate findspot (1 chert biface fragment and 1 utilized chert flake)
AgGs-18	Indeterminate findspot (1 utilized chert flake)
AgGs-19	Late Archaic (circa 1900-1400 B.C.) camp site (102 chert flakes, 4 utilized chert flakes, and 1 Genesee projectile point)
AgGs-21	Indeterminate findspot (1 chert flake and 1 sandstone abrader fragment)
AgGs-22	Indeterminate findspot (1 chert flake)
AgGs-23	Indeterminate findspot (1 chert flake)
AgGs-24	Indeterminate camp (12 chert flakes)
AgGs-25	Indeterminate findspot (1 chert biface tip fragment)
AgGs-26	Indeterminate findspot (1 chert flake)
AgGs-34	Early Woodland (circa 400 B.C.) findspot (2 Adena projectile point fragments)
AgGs-35	Indeterminate findspot (1 utilized chert flake)

In addition to the archaeological sites discovered by the Museum, the following information regarding artifacts found on PI-27E was obtained from the questionnaires and interviews with local residents.

Mr. Harold Warner reported that he had found an arrowhead in a field east of his house on Biggar Road. He could not recall the precise location where

it was found, but it might have been from one of three sites the Museum discovered in this field, AgGs-19, AgGs-34, or AgGs-35.

Mrs. Marjorie Meritt reported that Mr. Alvin Chambers of Cook's Mills had found arrowheads in the field east of her house on Crowland Ave. Mr. Chambers has a large collection of artifacts from throughout Crowland Township and remembered finding some arrowheads in this field, but he could not recall precisely where or which ones in his collection were from this field. The Museum discovered five archaeological sites in this field, AgGs-22, 23, 24, 25, and 26. It is probable that the arrowheads found by Mr. Chambers came from one of these sites.

Mr. Gordon Orr informed us that he knew of one location on the Candidate Site where arrowheads had been found. This location was in the same field that Mr. Chambers had found arrowheads (noted above) and where the Museum discovered five archaeological sites (AgGs-22, 23, 24, 25, and 26).

E.2 Archaeological Sites in the Vicinity

In addition to the archaeological sites discussed in section E.1.A above, which were found adjacent to PI-27E (AgGs-14, 20, 27, 28, and MW988), the following information on other archaeological sites in the vicinity was collected.

MW987 is an Archaic camp located adjacent to the south bank of the Welland River midway between MW988 and AgGs-20, 600 metres north of PI-27E.

MW990 is an Archaic camp located adjacent to the south bank of the Welland River, 1.8 kilometres west of PI-27E.

MW992 is an Archaic camp located adjacent to the south bank of the Welland River east of Grassy Brook, 1.5 kilometres east of PI-27E.

MW993 is an Archaic camp located adjacent to the north bank of the

E.3 Historic Sites on the Candidate Site

The Museum discovered one historic site on PI-27E, registered as AgGs-33. This site consisted of a scatter of historic material (china, glass, crockery, and white clay pipe fragments) in a location that coincides with the pre-1876 residence of T. Wilkins as shown on the map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876). Some of the china fragments are from plates dating prior to 1850, including examples of Blue Edged Scallop Ware, Polychrome Painted Ware and Blue Painted Ware (Ministry of Culture and Recreation n.d.).

A church shown on the map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876), at the southwest corner of Lot 4, B.F. Concession (southwest corner of PI-27E), is not standing today. Local residents recall this church but it was torn down, moved to a new location, or destroyed by fire. Since then, a railway line (Michigan Central, now Conrail) and a double hydro line have been constructed through the location where the church stood. A corn field now occupies the area northwest of the railway line and under the hydro line; this field was surveyed by the Museum and no evidence of the church was found. The area southeast of the railway line was pasture and weeds and was not surveyed by the Museum.

The map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876) shows two additional residences on the candidate site, those of Thomas Dell and Harvey Burns. Both were located on Lot 1, B.F. Concession. The area of the Thomas Dell residence, in the northeast corner of Lot 1 (northeast corner of PI-27E, north of Grassy Brook) was covered in pasture and weeds and was not investigated by the Museum. No structure is standing there today. The area of the Harvey Burns residence, south of Grassy Brook, is now occupied by a warehouse.

The map of Crowland Township in the Historical Atlas also shows Misener Road, running north to south through the centre of PI-27E (along the line between Lots 2 and 3). This road is not open today, and Mr. Gordon Orr

Welland River, 500 metres northwest of PI-27E.

AgGs-4 is a Late Archaic/Early Woodland camp located near the mouth of Grassy Brook (at the Welland River), 700 metres east of PI-27E.

AgGs-5 is a Late Archaic/Early Woodland camp located near the mouth of Tea Creek (at Lyon's Creek), 1.4 kilometres southeast of PI-27E.

Mr. Gordon Orr reported that artifacts had been found near the mouth of Grassy Brook (at the Welland River). These no doubt were recovered from archaeological site AgGs-4. Mr. Orr also reported that arrowheads had been found in the field north of PI-27E where the Museum discovered archaeological sites AgGs-20 and 27.

Mrs. Marjorie Meritt reported that arrowheads and prehistoric pottery had been found on the west side of her house on Crowland Ave. This area lies west of PI-27E and was not surveyed by the Museum as it was located off-site and was covered in crop.

A map contained in "Centennial Yearbook: History of Crowland Township" (Blanche 1967:76) shows the location of an "Indian Burying Ground" on the south side of the Chippewa (Welland) River, just east of Port Robinson. This location coincides with the location of archaeological site MW990. Marion White describes this site as an Archaic camp and did not note the presence of human bone. [The original settlers in many areas often referred to archaeological sites as "Indian Burying Grounds" on the assumption that all sites were occupied for long periods of time and contained burials. It is probable that this "Indian Burying Ground" east of Port Robinson is in fact archaeological site MW990 and it is doubtful that it contains burials since the archaeologist who investigated it, Marion White, did not note the presence of human bone.]

informed us that it was closed in the 1920s. The road allowance remains visible in most places, although it is overgrown with weeds, shrubs and trees. Two concrete bridges also remain visible. One, over a tributary of Lyon's Creek which cuts across the southern portion of PI-27E, is intact. The other, over Grassy Brook which cuts across the northern portion of PI-27E, is not intact but concrete abutments remain visible on either side of the creek. A dump is located just southeast of this former bridge over Grassy Brook, and it is well known to local bottle collectors. The Museum was taken to this dump by Mr. Gordon Orr, who has a large collection of bottles from it. This dump is concentrated in an area approximately 10 metres in diameter, although historic material is spread over a much larger area around it. We observed glass bottles, insulators, and hundreds of broken china and crockery fragments. Mr. Orr claimed that some of the bottles he had collected from this dump on previous occasions dated prior to 1814. Mr. Orr also informed us that he had collected glass insulators in this area, and said that a telegraph line may once have run parallel to Misener Road. The Museum did not collect any material from this dump since dense undergrowth prevented the establishment of a datum. Therefore the dump, or the bridges, are not registered as archaeological sites at this time.

Local residents, including Mr. Orr, Mr. Warner, and Mrs. Merritt, believe that the area of PI-27E was a battlefield and/or burial ground during the War of 1812-1814. Mr. Warner has a cannon ball which he found in the field east of his house on Biggar Road. The Museum did not encounter any material dating to the 1812-1814 period in this field, or on any of the other areas surveyed on PI-27E. However, a large portion of PI-27E was covered in woodlot or pasture and was not surveyed, so we cannot rule out the possibility that a historic site relating to the War of 1812-1814 might be located on this candidate site.

E.4 Historic Sites in the Vicinity

A school was constructed prior to 1876 near the northwest corner of Lot 4, Concession 1, Crowland Township, near the southwest corner of PI-27E. This

was a one-storey wooden structure which remains standing today, used as a residence.

Mr. Gordon Orr informed the Museum that a railway station, known as Fraser Station, was located on the southeast side of the Michigan Central Railroad (now Conrail) just north of Grassy Brook Road (adjacent to the northeast corner of PI-27E). This station, constructed after 1876, is not standing today.

The village of Montrose is located near the northeast corner of PI-27E, on both sides of the Welland River and on both sides of Montrose Road. In 1876 this village had a hotel, school, post office, blacksmith shop and houses. The map of Crowland Township in the Historical Atlas of Lincoln and Welland Counties (1876) shows the hotel on the south side of the Welland River, on the west side of Montrose Road at the southwest corner of the Montrose Bridge. However, some local residents believe this is in error and that the hotel was on the north side of the river. The area on the south side of the river is now occupied by the Ford Motor Company Niagara Glass Plant. The original Montrose Bridge, known locally as "The Red Bridge", was replaced by a newer structure when Montrose Road was widened and improved.

F. SIGNIFICANT ARCHAEOLOGICAL RESOURCES ON THE CANDIDATE SITE

The following archaeological resources on PI-27E are considered to be significant:

- AgGs-19
- AgGs-24
- the historic dump along Misener Road
- the church that once stood at the southwest corner of Lot 4 (southwest corner of PI-27E)

4.10 SUMMARY

This section will summarize the documented archaeological resources on the eight candidate sites.

4.10.1 CANDIDATE SITE PI-1N

Archaeological survey of 49% of the land on PI-1N, archival research, and public input resulted in the documentation of 16 native archaeological sites, three of which are considered to be significant. No non-standing historic Euro-Canadian sites were documented.

Archaeological site AiGx-46 is reported to be a Late Archaic/Early Woodland camp site based on artifacts in the possession of Mrs. T.W. Martin.

Archaeological site AiGw-190 is a camp site of indeterminate age and cultural affiliation. It yielded 120 chert flakes and 2 chert scrapers from a 25 metre by 15 metre area, and has the potential for yielding diagnostic artifacts during a future re-investigation.

The archaeological site reported on the Tomosky property is considered to be significant on the basis of artifacts in the possession of Mr. and Mrs. Tomosky.

Existing knowledge of the archaeological resources known on and in the vicinity of PI-1N leads to the conclusion that as yet undiscovered significant archaeological sites may exist on PI-1N. The known archaeological sites on this candidate site include ones dating to the Palaeo-Indian, Late Archaic, Early Woodland, and Late Woodland periods. Areas of high archaeological potential on PI-1N remain to be surveyed and these areas may contain as yet undiscovered significant archaeological sites dating to those time periods.

4.10.2 CANDIDATE SITE LF-2N

Archaeological survey of 67% of the land on LF-2N, archival research, and public input resulted in the documentation of no archaeological sites and of three historic sites.

Although no archaeological sites were discovered, there is an unconfirmed report of arrowheads being found on this candidate site. Since the Museum surveyed the area where these arrowheads were reportedly found and since the Museum did not discover any artifacts there, it is concluded that if an archaeological site existed there, it is not significant; in all probability these arrowheads represent an isolated findspot which is of little consequence to facilities development.

There is little probability that significant archaeological sites would be found during future surveys on this tract of land.

None of the three non-standing historic Euro-Canadian sites found on LF-2N are significant.

The Derry West store that was once located in the northwest corner of LF-2N is an important historic site to note, but it would not require avoidance or mitigation since it is already destroyed and disturbed by a gas station standing in its former location and by widening of Hwy. 10. If selected as the preferred site, furture research on LF-2N should include attempts to further document this structure and ascertain its significance in the history of the village of Derry West.

4.10.3 CANDIDATE SITE LF-4N

Archaeological survey of 60% of the land on LF-4N, archival research, and public input resulted in the documentation of two archaeological sites and of one non-standing historic site; none of these are considered to be significant

at this time. The two archaeological sites were both findspots and an archaeological survey of the area where the historic residence once stood did not result in confirmation of its existence (i.e., no cultural material was observed).

There are several known archaeological sites in the vicinity, dating to the Palaeo-Indian, Archaic, and Early Woodland periods. However, most of these are located beside Bronte Creek. Very little of the unsurveyed land on LF-4N has a high archaeological potential and there is little probability that as yet undiscovered significant archaeological sites exist there.

4.10.4 CANDIDATE SITE PI-13N

Archaeological survey of 25% of the land on PI-13N, archival research, and public input resulted in the documentation of two archaeological sites and of one non-standing historic site. Both of the archaeological sites were findspots and are not considered to be significant at this time. The non-standing historic site, AjGw-48, was a pre-A.D. 1877 residence and it is considered to be significant.

The significance of AjGw-48, the residence of Dr. A. Fox, lies in the fact that it was one of the first structures built on PI-13N and in the possibility that it was associated with a mill (i.e., saw mill or grist mill) that reportedly existed on a tributary of Sixteen Mile Creek near the Fox residence.

Approximately 75% of PI-13N remains to be surveyed, of which only a small portion has a high archaeological potential. It is doubtful, based on present knowledge, that significant archaeological sites would be found there during future archaeological survey.

4.10.5 CANDIDATE SITE LF-3C

Archaeological survey of 45% of the land on LF-3C, archival research, and public input resulted in the documentation of 42 archaeological sites, 16 of which are significant, and of 11 historic sites, five of which are significant.

LF-3C is the most significant of the eight candidate sites in terms of known archaeological resources and it includes the only Iroquoian (Late Woodland period) villages and hamlets documented in Phase 4A. It also includes certain types of historic sites not documented on the other candidate sites, such as a store/post office, store/seed-cleaning business/tailor shop, and two pre-A.D. 1840 log cabins.

The significant archaeological sites on LF-3C include a prehistoric Neutral village (AgGv-2), a prehistoric Neutral village or hamlet (AgGv-18), an Early Ontario Iroquois village or hamlet (AgGv-11), two Late Archaic camp sites (AgGv-29 and AgGv-39), an Archaic camp site (AgGv-26), and ten camp sites of indeterminate age and cultural affiliation (AgGv-5, 9, 19, 22, 24, 25, 37, 40, 41, and 42).

All but one (AgGv-37) of the above noted significant archaeological sites are spatially clustered in one geographical area on LF-3C, this being a zone measuring 200 metres on both sides of Beaver Creek. Several of the findspots found on LF-3C also occur in this zone. Since this zone contains many significant archaeological sites (as well as several findspots which are not, at this time, considered to be significant) and since a large portion of the land within this zone was not surveyed during Phase 4A (i.e., it was covered in hay, pasture, or woodlot), it was recommended that this entire zone be avoided during facilities development. This constraint mapping was used, in part, to refine the boundaries of LF-3C during the detailed comparative evaluation (see Section 6.3) (see also M.M. Dillon Ltd., 1985b, OWMC Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Site Selection).

The one significant archaeological site that is not located within 200 metres of Beaver Creek is site AgGv-37. It is a camp site of indeterminate age and cultural affiliation, located in the central portion of LF-3C, that yielded two projectile tip fragments and 65 chert flakes. Based on present knowledge, avoidance or mitigation are recommended if it would be impacted during facilities development, if LF-3C is selected as the preferred site.

Four of the five significant historic Euro-Canadian sites that were documented are also located within the zone of 200 metres on either side of Beaver Ceek. These would not be impacted if this zone is excluded from facilities development as recommended above. These are the Elcho store/post office, the store/seed-cleaning business/tailor shop, Ithemar Comfort's first log cabin (circa 1836), and Ithemar Comfort's second log cabin (circa 1876).

The fifth significant historic site is AgGv-35, E. Vaughan's log cabin (circa 1830s) on the west side of Krick Road.

A major portion of the 55% of land remaining to be surveyed on LF-3C occurs in the zone of high archaeological potential lying within 200 metres of Beaver Creek. If this zone is excluded from facilities development as recommended above, then most of the land remaining to be surveyed on LF-3C has a low archaeological potential. There would remain, however, small parcels of land with a high archaeological potential; these occur adjacent to the two tributaries of the Welland River in the southwest corner of LF-3C.

4.10.6 CANDIDATE SITE LF-9C

Archaeological survey of 15% of the land on LF-9C, archival research, and public input resulted in the documentation of four archaeological sites, one of which is considered to be significant, and of four historic sites, two of which are considered to be significant.

Archaeological site AgGu-25 is considered to be significant based on artifacts recovered by the Museum (10 chert flakes and 1 chert core) and based on the landowner's discovery of two projectile points from the same location. One of the projectile points in the possession of the landowner, Mr. Flameling, is a Brewerton Corner-Notched type, circa 2500 B.C., suggesting that this site is a Late Archaic camp.

Other periods of Ontario prehistory are represented on LF-9C by the Museum's discovery of two findspots, an Early Archaic (circa 8000-7500 B.C.) Nettling projectile point (AgGu-28), and an Early Woodland (circa 900-400 B.C.) Meadowood cache blade (AgGu-26).

A major portion of the 85% of land on LF-9C that remains unsurveyed has a high archaeological potential and additional sites dating to the Early Archaic, Late Archaic, and Early Woodland periods may be found there.

One of the significant historic sites is the location of the pre-1876 residence of N. Hartwell. Although this residence is not standing and although the Museum did not discover any cultural material in this location, the site is considered significant since Mr. Hartwell was listed in the Historical Atlas as a hub manufacturer. It is probable that a workshop or small factory stood, circa 1876, near Mr. Hartwell's house.

The Museum did not discover cultural material in the location where a blacksmith shop was reported to be located on the west side of Schram Road since this area was covered in tall weeds and pasture. If a blacksmith shop did exist in this location, it was not standing in 1876 since it is not shown in the 1876 historical atlas. Nevertheless, this blacksmith shop would be a significant historic site if its presence could be confirmed. Since the Museum received a reliable report that the blacksmith shop did exist, it is treated as a significant archaeological resource.

4.10.7 CANDIDATE SITE LF-1E

Archaeological survey of 18% of the land on LF-1E, archival research, and public input resulted in the documentation of 11 archaeological sites, three of which are considered to be significant, and of eight historic sites, one of which is considered to be significant.

The three significant archaeological sites are all indeterminate camp sites that did not yield any diagnostic artifacts. All three have the potential for yielding diagnostic artifacts during future research.

The three significant archaeological sites and five of the remaining eight archaeological sites (findspots) were found in the southern half of LF-1E (i.e., south of Young Road), while three findspots were found north of Young Road. Most of the lands south of Young Road were excluded by the refined boundary identified on LF-1E for the detailed comparative evaluation (see Section 6.4). Consequently, all three significant archaeological sites were excluded from further analysis. Most of the lands surveyed during Phase 4A were in the southern half of LF-1E, while only two small fields were surveyed in the northern half. A majority of the land remaining to be surveyed has a high archaeological potential.

The single significant historic site documented to date is the location of the pre-1876 residence of Jacob Lemon Dell. Mr. Dell was a prominant resident of Crowland Township and according to the 1876 historical atlas he was a farmer, shoemaker, cooper, and township councillor. It is probable that a workshop or small factory stood near his house at the northwest corner of the intersection of Young Road and Crowland Ave.

4.10.8 CANDIDATE SITE PI-27E

Archaeological survey of 35% of the land on PI-27E, archival research, and public input resulted in the documentation of 13 archaeological sites, two of

which are considered to be significant, and of eight historic sites, two of which are considered to be significant. (Several significant archaeological sites, primarily Late Archaic camps, were also documented in the immediate vicinity of PI-27E; most of these are located within 150 metres of the Welland River but north of the northern boundary of PI-27E.)

One of the significant archaeological sites found on PI-27E is AgGs-19, a Late Archaic (circa 1900-1400 B.C.) camp. The Museum recovered a large number of chert flakes (104), four utilized chert flakes, and a Genesee projectile point from this site, and it has the potential for yielding additional material, including diagnostic artifacts.

The other significant archaeological site, AgGs-24, is a camp of indeterminate age and cultural affiliation but it has the potential for yielding diagnostic artifacts.

A major portion of the 65% of land remaining to be surveyed on PI-27E has a high archaeological potential since two major watercourses run through this candidate site. There is a high potential for the future discovery of significant archaeological sites, especially Late Archaic camp sites, on PI-27E.

The two significant historic sites documented to date on PI-27E are the location of a church and a historic dump. In 1876 a church stood in the southwest corner of PI-27E and its location is now disturbed by a railway and hydro lines. The dump is located adjacent to Misener Road (now closed) near Grassy Brook and is considered to be significant since it is reported to contain cultural material dating to 1814.

Table 4: Data for Chert Bifaces and Projectile Points (Page 1 of 4)
Measurement in parentheses () indicates incomplete or broken specimen

Heritage Resource Site Number and Catalogue Number	Projectile Point Type	Length (mm)	Width (mm)	Thickness (mm)	Basal Width (mm)	Basal Configuration	Notch 1 (Height x Depth)	Notch 2 (Height x Depth)	Inter-Notch Width
AiGw-188:1	Brewerton Corner-Notched	(34)	29	8	18	Convex	4 x 8	4 x 7	14
AjGw-49:1	Biface	(35)	33	11	-	-	-	-	-
AgGv-2:7	Nanticoke Side-Notched	32	16	6	16	Concave	4 x 3	5 x 3	16
AgGv-2:81	Brewerton Corner-Notched	(41)	31	8	-	-	-	-	13
AgGv-2:79	Biface	53	35	9	-	-	-	-	-
AgGv-3:1	Point (Tip)	(43)	33	9	-	-	-	-	-
AgGv-5:4	Biface (Base)	(41)	42	11	-	-	-	-	-
AgGv-5:7	Biface (Base)	(49)	79	22	-	-	-	-	-
AgGv-5:13	Biface (Tip)	(23)	24	9	-	-	-	-	-
AgGv-11:13	Bifurcate Base	34	21	5	11	Concave	4 x 4	4 x 3	10
AgGv-11:19	Levanna	47	28	10	30	Concave	-	-	-
AgGv-11:20	Point (Midsection)	(17)	24	6	-	-	-	-	-
AgGv-11:23	Point (Tip)	(17)	11	4	-	-	-	-	-
AgGv-11:38	Point (Tip)	(41)	28	6	-	-	-	-	-
AgGv-11:40	Biface	30	24	6	-	-	-	-	-
AgGv-18:40	Nanticoke Side-Notched	(31)	18	5	20	Concave	3 x 3	2 x 3	22
AgGv-18:44	Biface	(26)	26	17	13	Straight	-	-	-
AgGv-18:51	Nanticoke Triangular	20	17	3	-	-	-	-	-
AgGv-18:74	Nanticoke Notched Base	(17)	21	5	17	Concave	4 x 3	4 x 2	15

Table 4: Data for Chert Bifaces and Projectile Points (continued, Page 2 of 4)
Measurement in parentheses () indicates incomplete or broken specimen

Heritage Resource Site Number and Catalogue Number	Projectile Point Type	Length (mm)	Width (mm)	Thickness (mm)	Basal Width (mm)	Basal Configuration	Notch 1 (Height x Depth)	Notch 2 (Height x Depth)	Inter-Notch Width
AgGv-18:76	Nanticoke Triangular Base	(10)	20	5	-	-	-	-	-
AgGv-18:77	Nanticoke Triangular Base	(16)	14	5	19	Concave	-	-	-
AgGv-18:78	Nanticoke Triangular	(23)	17	4	-	-	-	-	-
AgGv-19:1	Biface	40	33	11	-	-	-	-	-
AgGv-24:3	Biface	(15)	30	6	-	-	-	-	-
AgGv-26:12	Biface	(48)	35	8	-	-	-	-	-
AgGv-27:1	Adena Point	(53)	32	10	18	Convex	-	-	22
AgGv-28:1	Nanticoke Triangular Base	(19)	19	5	-	-	-	-	-
AgGv-29:1	Brewerton Corner-Notched	(47)	30	8	25	Convex	6 x 5	6 x 7	19
AgGv-33:1	Nanticoke Side-Notched	(26)	21	5	21	Concave	2 x 3	3 x 2	14
AgGv-37:1	Point Tip	(13)	17	13	-	-	-	-	-
AgGv-37:7	Point Tip	(16)	(18)	4	-	-	-	-	-
AgGv-39:14	Lamoka	53	22	10	-	-	-	-	13
AgGv-41:5	Biface (Tip)	(22)	(16)	4	-	-	-	-	-
AgGv-41:8	Biface (Base)	(24)	27	17	-	-	-	-	-

Table 4: Data for Chert Bifaces and Projectile Points (continued, Page 3 of 4)
Measurement in parentheses () indicates incomplete or broken specimen

Heritage Resource Site Number and Catalogue Number	Projectile Point Type	Length (mm)	Width (mm)	Thickness (mm)	Basal Width (mm)	Basal Configuration	Notch 1 (Height x Depth)	Notch 2 (Height x Depth)	Inter-Notch Width
AgGv-42:10	Biface (Tip)	(17)	(12)	4	-	-	-	-	-
AgGu-26:1	Meadowood Cache Blade	(44)	24	6	-	-	-	-	-
AgGu-28:1	Nettling Point	34	23	6	16	Convex	4 x 7	2 x 6	11
AgGs-9:1	Biface	(15)	25	5	-	-	-	-	-
AgGs-31:1	Biface	(31)	18	6	-	-	-	-	-
AgGs-14:16	Lamoka	(50)	24	9	(11)	-	6 x 6	7 x 5	14
AgGs-14:27	Brewerton Side-Notched	(30)	28	6	22	Convex	7 x 3	5 x 2	21
AgGs-14:28	Lamoka	(40)	17	6	(11)	Convex	-	5 x 2	13
AgGs-14:29	Lamoka	(25)	16	6	(11)	Concave	4 x 2	-	11
AgGs-14:38	Lamoka	52	22	10	21	Convex	-	-	-
AgGs-14:80	Lamoka	(55)	22	6	16	Convex	6 x 5	5 x 4	11
AgGs-14:93	Archaic Side-Notched	(29)	26	7	-	-	-	-	15
AgGs-14:118	Lamoka	(48)	22	6	(16)	Concave	8 x 3	8 x 4	15
AgGs-14:12	Biface	(35)	22	7	-	-	-	-	-
AgGs-14:37	Biface	(47)	40	7	-	-	-	-	-
AgGs-14:43	Biface	63	43	24	-	-	-	-	-
AgGs-14:54	Biface	(33)	(31)	7	-	-	15 x 5	-	-
AgGs-14:68	Biface (Base)	(26)	(34)	10	-	-	-	-	-
AgGs-14:104	Biface (Base)	(50)	45	11	-	-	-	-	-
AgGs-14:110	Biface	(43)	50	14	-	-	-	-	-
AgGs-14:119	Biface (Base)	(37)	34	9	-	-	-	-	-
AgGs-14:121	Biface (Tip)	(41)	31	9	-	-	-	-	-
AgGs-14:122	Biface (Base)	(27)	29	7	-	-	-	-	-
AgGs-17:2	Biface	(40)	(26)	6	-	-	-	-	-

Table 4: Data for Chert Bifaces and Projectile Points (continued, Page 4 of 4)
Measurement in parentheses () indicates incomplete or broken specimen

Heritage Resource Site Number and Catalogue Number	Projectile Point Type	Length (mm)	Width (mm)	Thickness (mm)	Basal Width (mm)	Basal Configuration	Notch 1 (Height x Depth)	Notch 2 (Height x Depth)	Inter-Notch Width
AgGs-19:14	Genesee	(46)	47	10	-	-	-	-	26
AgGs-20:1	Point (Base)	(21)	31	6	-	-	-	-	-
AgGs-20:5	Lamoka	48	19	7	14	Convex	6 x 2	6 x 2	13
AgGs-25:1	Point (Tip)	(30)	21	5	-	-	-	-	-
AgGs-34:1	Adena	(34)	(23)	9	13	Straight	-	-	14
AgGs-34:2	Adena	(39)	30	7	-	-	-	-	-

Table 5: Summary of Archaeological Material Recovered and Catalogued

Candidate Site	Number of Archaeological Sites*	Number of Historic Sites*	Ceramics	Lithics	Ground Stone	Bone	Charcoal	Historic Material	Total Number of Artifacts
PI-1N	13	0	0	141	0	0	0	0	141
LF-2N	0	0	0	0	0	0	0	0	0
LF-4N	2	0	0	4	0	0	0	0	4
PI-13N	2	1	0	2	0	0	0	48	50
LF-3C	41	3	31	948	2	4	1	345	1331
LF-9C	4	1	0	21	0	0	0	3	24
LF-1E	10	1	0	131	0	0	0	10	141
PI-27E	13	1	0	132	1	9	1	111	254
Totals	85	7	31	1379	3	13	2	517	1945

* Includes only those sites from which material was collected by the Museum of Indian Archaeology in 1984.

CHAPTER 5:

BASIC ACCEPTABILITY

As part of the analysis, all candidate sites were screened for basic acceptability, to ascertain if data collected during Phase 4A indicated risks, impacts, or costs which were severe enough to warrant rejection of any of the candidate sites.

Archaeological research did not reveal data to suggest that any of the candidate sites should be rejected. Since OWMC had made a committment to mitigate significant archaeological resources on the preferred site prior to facilities development, it was assumed that archaeological resources would not be a major factor to consider in the basic acceptability analysis.

Candidate site LF-2N was rejected in this process due to severe hydrogeological constraints and therefore LF-2N was excluded from further analysis by all consultants (M.M. Dillon Ltd. 1985a, OWMC Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Interim Site Selection Report: Candidate Site LF-2N).

CHAPTER 6:

REFINEMENT OF SITE BOUNDARIES

6.1 INTRODUCTION

Three of the candidate sites (P1-1N, LF-3C, and LF-1E) were larger than required for the specific facilities proposed to be located on them. Candidate site boundaries were also revised based on the analysis of data collected by the consultants (i.e. identification of constraints). The data used in this process included that on archaeological resources. (For a more detailed description of the refinements to site boundaries see by M.M. Dillon Ltd. 1985b, Site Selection Process, Phase 4A: Selection of a Preferred Site(s)-Site Selection).

As a consequence of the refinements to the boundaries of these three candidate sites, the consultants revised their analysis to include only the data within the refined boundaries.

In the following subsections, these revisions are noted with respect to archaeological resources. We will list the archaeological resources that remain within the refined boundaries. Archaeological resources documented in Chapter 4 as being located on the candidate site but now excluded because they are not within the refined site boundary effectively become archaeological resources in the vicinity. Archaeological resources remaining within the refined boundaries are merely listed below, and the reader is referred to the appropriate section of Chapter 4 above to obtain a description of those archaeological resources.

The archaeological resources listed below for refined boundaries on sites

PI-1N, LF-3C, and LF-1E are the ones used in the comparative evaluation, rather than the archaeological resources listed in Chapter 4.

The site selection team also recommended a change to the area of land to be considered for analysis on candidate site PI-27E. The resulting changes to data on archaeological resources are listed in Section 6.5 below.

6.2 PI-1N

6.2.1 ARCHAEOLOGICAL SITES REMAINING ON-SITE

Ten of the 16 archaeological sites documented on candidate site PI-1N in Section 4.2.E.1 remain within the refined boundary. These are listed below:

AiGx-45
AiGx-46
AiGx-100
AiGw-184
AiGw-185
AiGw-186
AiGw-188
AiGw-189
AiGw-190
-the Late Archaic camp site reported on the Tomosky property

Of these ten archaeological sites, three are considered to be significant (AiGx-46, AiGw-190, and the site reported on the Tomosky property).

6.2.2 HISTORIC SITES REMAINING ON-SITE

No non-standing historic sites were documented on PI-1N, so no data revisions were necessary for this candidate site.

6.3 LF-3C

6.3.1 ARCHAEOLOGICAL SITES REMAINING ON-SITE

Twenty-nine of the 42 archaeological sites documented on candidate site LF-3C in Section 4.6.E.1 remain within the refined boundary. These are listed below.

Twelve of those 29 sites are considered to be significant, and are marked with an asterisk (*) on the list below.

-AgGv-13
-AgGv-14
*-AgGv-18
*-AgGv-19
-AgGv-20
-AgGv-21
*-AgGv-22
-AgGv-23
*-AgGv-24
*-AgGv-25
*-AgGv-26
-AgGv-27
-AgGv-28
*-AgGv-29
-AgGv-30
-AgGv-31
-AgGv-32
-AgGv-33
-AgGv-34
-AgGv-36
*-AgGv-37
-AgGv-38
*-AgGv-39
*-AgGv-40
*-AgGv-41
*-AgGv-42
-AgGv-43
-AgGv-44
-AgGv-45

6.3.2 HISTORIC SITES REMAINING ON-SITE

Seven of the 11 non-standing historic sites documented on candidate site LF-3C in Section 4.6.E.3 remain within the refined boundary on LF-3C. These are listed

below.

Three of those seven historic sites are considered to be significant, and are marked with an asterisk (*) on the list below.

-AgGv-7 (J.S. Robins/Ashton residence, pre-1876)
*-AgGv-35 (E. Vaughan's log cabin, circa 1830s)
-pre-1876 residence of F.L. Smith
-pre-1876 residence just south of AgGv-7, unknown occupant
-pre-1876 residence of J.C. Depotty
*-1836 log cabin of I. Comfort
*-1876 log cabin of I. Comfort

6.3.3 FURTHER REVISION AFFECTING LF-3C

The refined site boundary for LF-3C excluded two specific areas of the original candidate site (the northwest and northeast corners) due to high constraints and to minimize impacts. A proposed acquisition boundary for LF-3C was drawn to exclude these areas (see M.M. Dillon 1985b).

The site selection team identified further constraints within LF-3C, this being the floodplain of Beaver Creek. The Museum further identified an area of high constraint as a zone 200 metres wide on either side of Beaver Creek due to a concentration of significant archaeological sites within this zone (see Section 4.10.5). It was decided to retain the lands containing these constraints as part of the revised proposed acquisition boundary, but this zone 200 metres wide on either side of Beaver Creek was identified as having high constraints. Subsequently, the Museum recommended that this high constraint zone should be avoided during the comparison of siting options. Maps showing the constrained area, and a description of the rationale for these decisions, are contained in M.M. Dillon's Site Selection Report (1985b).

As a result of these revisions, the data for LF-3C were adjusted further

to exclude a consideration of impacts within the constraint zone 200 metres wide on either side of Beaver Creek. This had a profound affect on the archaeological resource data since many of the archaeological sites were located within this zone.

6.3.3.1 Archaeological Data For LF-3C Input to the Detailed Comparative Evaluation

The revisions noted in Section 6.3.3 above led to the following adjustments to archaeological data to be considered for the detailed comparative evaluation (Chapter 7).

One significant archaeological site, AgGv-37, remains within the refined boundary on LF-3C and outside of the high constraint zone.

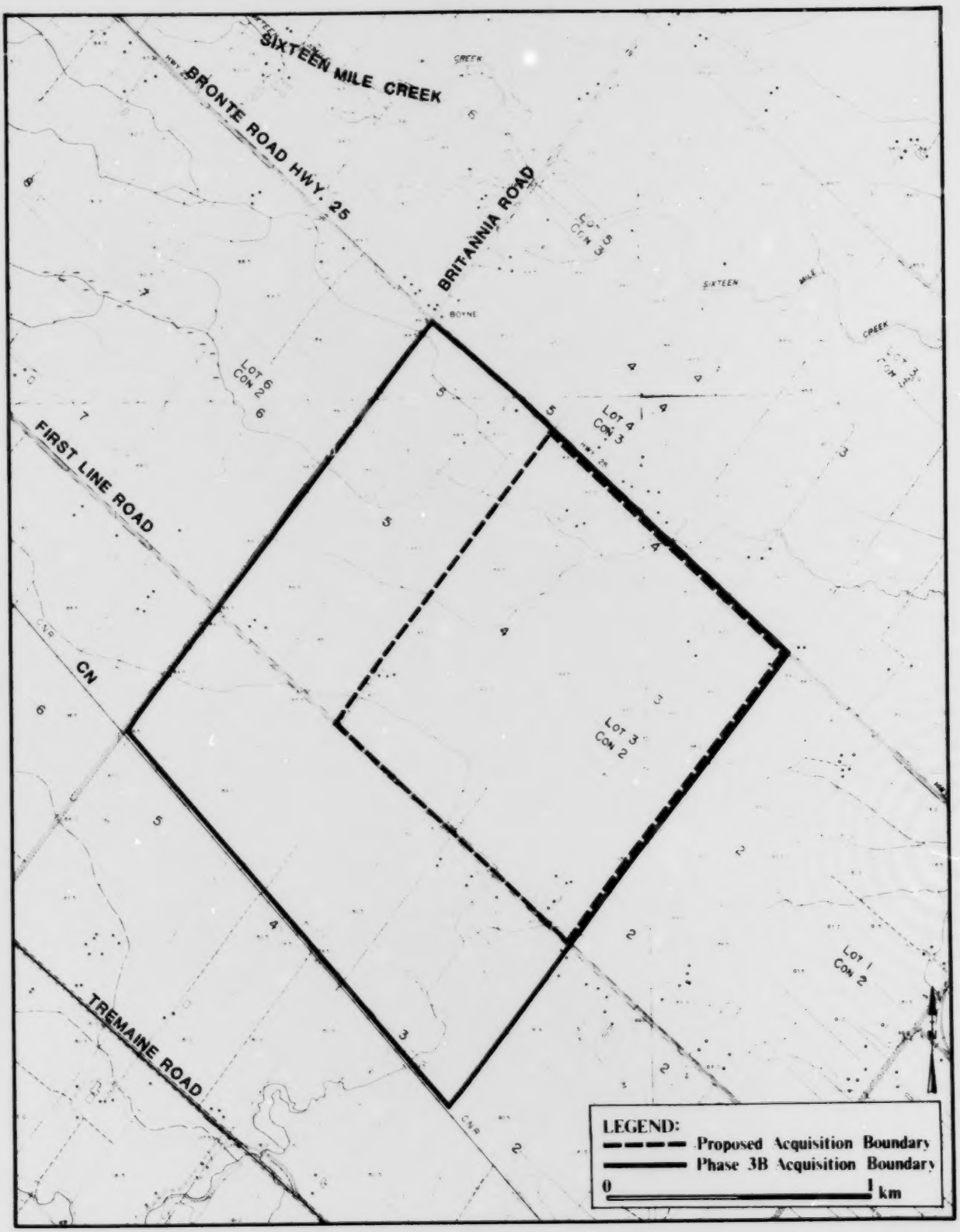
One significant historic site, AgGv-35 (the circa 1830s log cabin of E. Vaughan) remains within the refined boundary on LF-3C and outside of the high constraint zone.

6.4 LF-1E

6.4.1 ARCHAEOLOGICAL SITES REMAINING ON-SITE

Four of the 11 archaeological sites documented on candidate site LF-1E in Section 4.8.E.1 remain within the refined boundary on LF-1E. These are listed below.

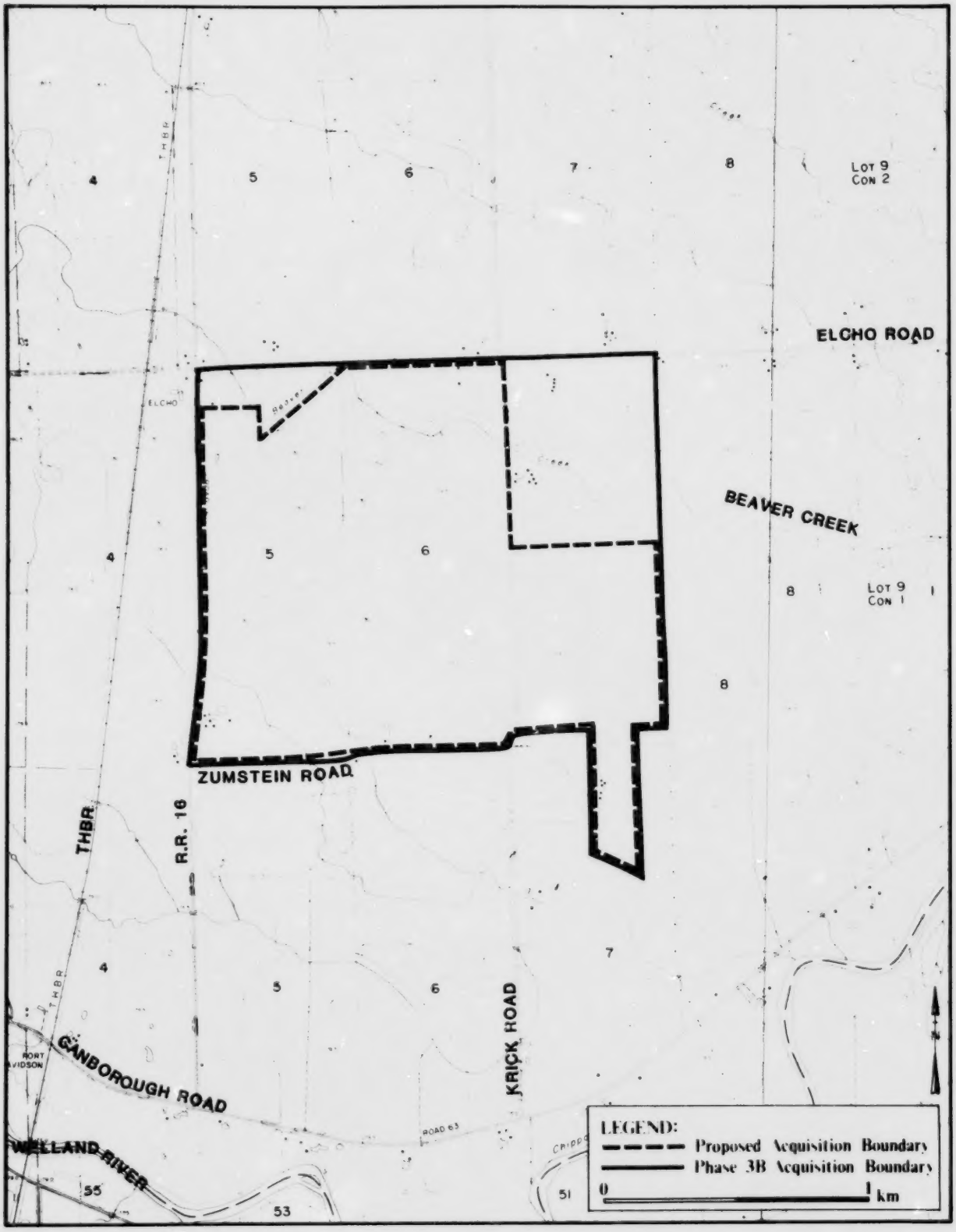
-AgGs-9
-AgGs-30
-AgGs-31
-artifacts reported on farm of Mr. Thomas Cowan



PI-1N

REFINEMENT OF SITE BOUNDARIES

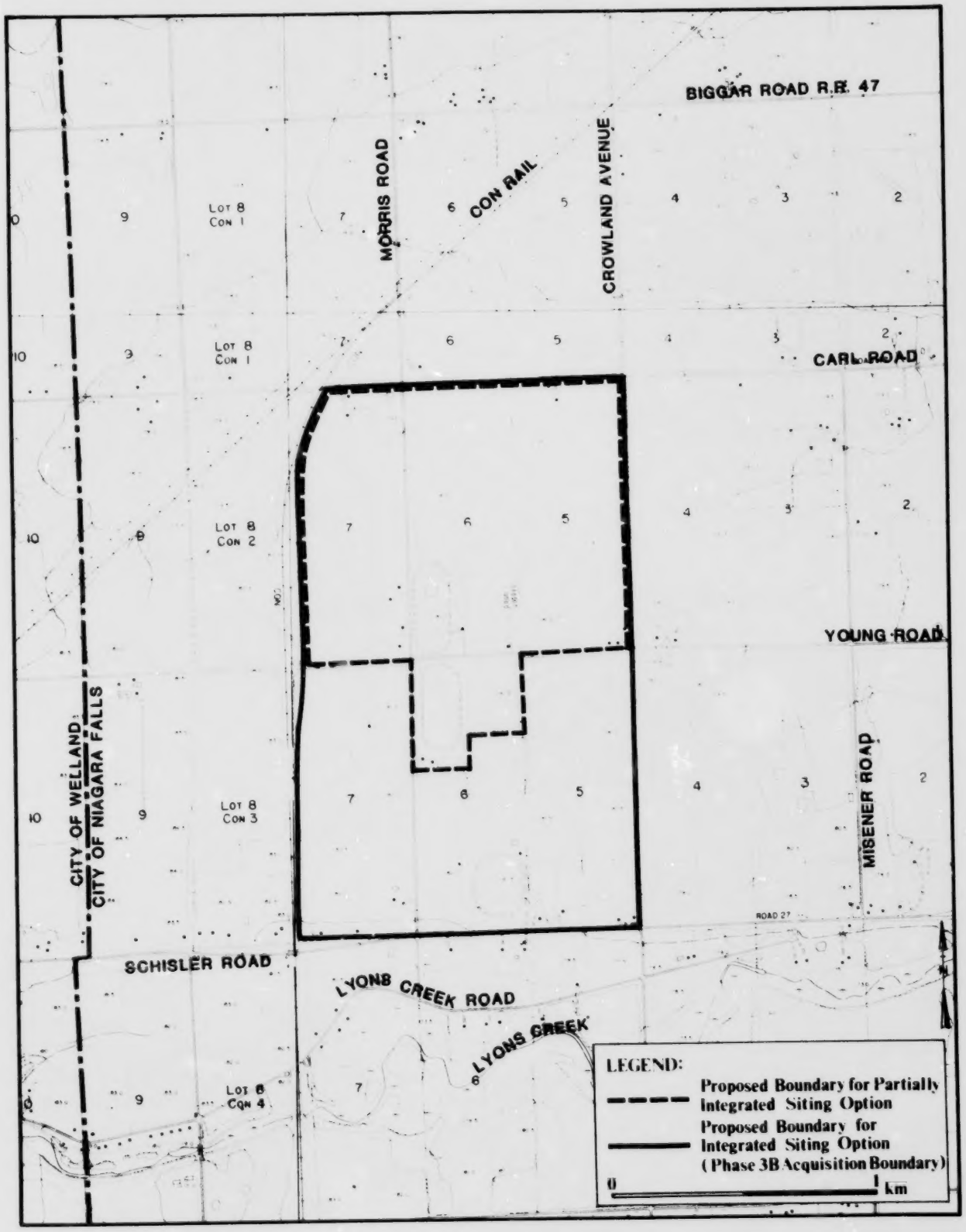
FIGURE 2



LF-3C

REFINEMENT OF SITE BOUNDARIES

FIGURE 3



LF-1E

REFINEMENT OF SITE BOUNDARIES

FIGURE 4

None of these archaeological sites are considered to be significant.

6.4.2 HISTORIC SITES REMAINING ON-SITE

Seven of the eight historic sites documented on candidate site LF-1E in Section 4.8.E.3 remain within the refined boundary on LF-1E. These are listed below.

One of these seven sites is considered to be significant. It is marked with an asterisk (*) on the list below.

-AgGs-29 (pre-1876 residence of C. Everingham)
*-pre-1876 residence of J.L. Dell
-pre-1876 residence of M. Quinlan
-pre-1876 residence of C. and E. Piper
-pre-1876 residence of O. Young
-pre-1876 residence of A. Misener
-pre-1876 residence of D. Collens

6.5 REVISION TO DATA FROM PI-27E

As noted in Section 1.5, a decision was made to confine the area of consideration for the comparative evaluation for candidate site PI-27E to that portion of the site south-southeast of the railway line. This decision was made after the Museum had collected data from the entire site area. For the comparative evaluation, these data were revised to include only that portion of the site south-southeast of the railway line.

6.5.1 ARCHAEOLOGICAL SITES REMAINING ON-SITE

Eight of the 13 archaeological sites documented on PI-27E in Section 4.9 remain within the portion of the site south-southeast of the railway line. These are listed below.

AgGs-15
AgGs-16
AgGs-17
AgGs-18
AgGs-19
AgGs-21
AgGs-34
AgGs-35

One of these sites, AgGs-19, is considered to be significant.

6.5.2 HISTORIC SITES REMAINING ON-SITE

Five of the eight non-standing historic sites documented on PI-27E in Section 4.9 remain within the portion of the site south-southeast of the railway line. These are listed below.

-AgGs-33 (pre-1876 residence of T. Wilkins)
-the pre-1876 residence of T. Dell
-the pre-1876 residence of H. Burns
-a portion of Misener Road
-the bridge on Misener Road over a tributary of Lyons Creek

None of the non-standing historic sites are considered at this time to be significant.

6.6 REVISED ARCHAEOLOGICAL DATA INPUT TO DETAILED COMPARATIVE EVALUATION

These modifications to data on archaeological resources resulting from the refinement of site boundaries are summarized in Table 6 below. As noted earlier, only data for those archaeological resources that were considered to be significant were input to the comparative evaluation of siting options.

Table 6: Revised Archaeological Data (*)

Candidate Site (**)	Number of Significant Archaeological Sites	Number of Significant Historic Sites	Total
PI-1N	3	0	3
LF-4N	0	0	0
PI-13N	0	1	1
LF-3C	1	1	2
LF-9C	1	2	3
LF-1E	0	1	1
PI-27E	1	0	1

Notes: * - Involves only significant archaeological resources located within refined site boundary.

** - Excludes candidate site LF-2N which was rejected by the basic acceptability screen (Chapter 5).

CHAPTER 7:

COMPARATIVE EVALUATION OF SITING OPTIONS

7.1 INTRODUCTION

Siting option refers to the combination of candidate sites required to accommodate all OWMC facilities. An integrated siting option involves all facilities located on one site. For a non-integrated option, two sites are required to accommodate the facilities [i.e. landfill (one site), incinerator (alternate site) and physical/chemical treatment plant (paired with either the landfill or the incinerator)].

The siting options considered by the site selection team for the comparative evaluation (see M.M. Dillon Ltd. 1985b, OWMC Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Site Selection) were as follows:

LF-4N/PI-1N
LF-4N/PI-13N
LF-3C
LF-9C
LF-1E
LF-1E/PI-27E

7.2 COMPARISON OF SITING OPTIONS

Taking into consideration the data collected and subsequent modifications to the data based on refinements to candidate site boundaries, the siting options

were compared using the single indicator of number of significant archaeological resources. This comparison is presented below.

Table 7: Siting Option Comparison

Siting Option	Number of Significant Archaeological Resources Impacted
LF-9C	3
LF-4N/PI-1N	3
LF-3C	2
LF-1E/PI-27E	2
LF-1E	1
LF-4N/PI-13N	1

Table 8 provides a brife summary description of the significant archaeological resources and indicates on which candidate site they are located. As noted in Section 2.5.3, no distinction was made on the relative significance of one archaeological or historic site over another; all were treated as equally significant.

7.3 FACTOR SUITABILITY LEVEL AND RANKING

The Museum applied only one indicator within one factor to the detailed comparative evaluation. Since the range of significant archaeological resources impacted between siting options was narrow (1 to 3), the Museum did not scale or weight the indicator or assign a factor suitability level as did other consultants.

The Ontario Waste Management Corporation has made a committment to mitigate all archaeological resources which might be impacted on the preferred site. Thus, although there are differences between the siting options in terms of the number of significant archaeological resources that would be

Table 8: Nature, Type, and Cultural Affiliation of Significant Archaeological Resources on the Siting Options

Siting Option	Number of Significant Archaeological Resources	Description of Archaeological Resource
LF-9C	3	-AgGu-25. Indeterminate native camp site [10 flakes, 1 core (plus 2 projectile points found by landowner)] -pre-1876 non-standing historic site (residence and workshop of N. Hartwell, hub manufacturer) -unconfirmed report of blacksmith shop
LF-4N/PI-1N	3	3 Native camp sites (all on PI-1N): -AiGx-46. Multicomponent (Palaeo-Indian, Late Archaic, Early Woodland periods) based on landowner's collection of artifacts -AiGw-190. Indeterminate period (120 chert flakes, 2 scrapers) -Tomosky Site. Late Archaic/Middle Woodland periods based on landowner's collection of artifacts
LF-3C	2	-AgGv-37. Indeterminate native camp site (65 chert flakes and 2 projectile point tip fragments) -AgGv-35. Non-standing historic site (E. Vaughan's log cabin, circa A.D. 1830)
LF-1E/PI-27E	2	-pre-1876 non-standing historic site (residence and workshop of J.L. Dell) (LF-1E) -AgGs-19. Native camp site, Late Archaic period (102 chert flakes, 4 utilized chert flakes, 1 Genesee type projectile point) (PI-27E)
LF-1E	1	-pre-1876 non-standing historic site (residence and workshop of J.L. Dell)
LF-4N/PI-13N	1	-AjGw-48. Non-standing historic site (pre-1876 residence of Dr. Fox and possible grist or saw mill) (PI-13N)

impacted by facilities development, such archaeological resources were not considered to pose a severe constraint on facilities development. For this reason the factor of archaeological resources was ranked as one of the lowest in terms of the overall ranking of all impact factors (see M.M. Dillon Ltd. 1985b).

7.4 OVERVIEW AND RESIDUAL IMPACTS

Data on archaeological resources were used to assist in the refinement of boundaries on three candidate sites (PI-1N, LF-3C, and LF-1E). A high number of archaeological resources concentrated within 200 metres on either side of Beaver Creek on candidate site LF-3C led to the recommendation that this zone be avoided if LF-3C were to be selected as the preferred site for OWMC's proposed facilities. The cost of mitigating significant archaeological resources was provided to the engineering consultant (Monenco).

The Museum of Indian Archaeology has identified archaeological resource constraints on each of the six siting options. These significant archaeological resources range in number from one to three on the various siting options. The archaeological resource data were input to the overall site selection process and were used in the detailed comparative evaluation of siting options. While these significant archaeological resources do not pose a severe enough constraint to rule out facilities development on any one siting option, these significant archaeological resources were nevertheless identified and led to the recommendation that they be avoided or mitigated if they will be impacted by facilities development. It is also recognized that the data collection on each candidate site was incomplete insofar as only a portion of each candidate site was subjected to a field survey due to the limitations of crop cover. Additional field work and data collection are recommended for the next phase of study on the siting option selected as the preferred location for OWMC's proposed facilities. This field work should include both an attempt to survey all areas not examined during Phase 4A and an attempt to re-investigate all archaeological resources, especially the

significant archaeological resources, documented during Phase 4A.

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APPENDIX A:

PHASE 4A QUESTIONNAIRE

(Portion dealing with archaeological resources)

The following is a reproduction of the last page of the questionnaire circulated to all on-site and site vicinity residents and landowners as part of OWMC's Phase 4A "Walk and Talk" data collection program:

Interview Identification Number:_____

ARCHAEOLOGICAL RESOURCES

The following questions deal with historical and cultural artifacts that may have been found on properties in this area. This information will help to determine the potential impact of OWMC facilities on historical and cultural resources.

1. Do you have in your possession any items of historical or cultural significance which were found on your property?

   Yes No

   (If yes) What kind of items? _____
   _____
   _____

2. Where on your property were these items found?
   (Locate on map with symbol AR)

3. Do you know of anyone who has or knows of historical or cultural items found on your property or on neighbouring properties?

   Yes No

   (If yes) Can you provide us with their name, address and telephone number?
   _____
   _____
   _____

4. Do you know of any pioneer cemeteries, Indian burial grounds or other historical or cultural features on your property or on neighbouring properties?

   Yes No

   (If yes please locate on the map with sympol H.)

APPENDIX B:

Summary of Interview Data and Public Contacts

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
PI-1N	Mrs. T.W. Martin	S	60-032	21-2	-has artifacts from archaeological sites on property (AiGx-45 and AiGx-46) -permission to survey
	Mr. & Mrs. Walter Tomosky	S	60-067	60-2	-arrowheads on property -historic house (standing)
	Mr. & Mrs. B. Pompa	S	60-027	51-2	-arrowheads on adjacent property -"unnatural" pile of rocks
	Mr. & Mrs. Clare Ford	S	60-025-00	22-1	-"graves" found 2 miles north
	Mr. Howard Gowland	SV	60-097 60-094-10	45-2	-arrowheads
	Mr. Ernest Rayner	SV	60-089 100-015	418G	-arrowheads
	Mr. George Marshall	SV	60-102	247	-arrowhead
	Mrs. Marjorie Jarvis	SV	60-089	121-2	-arrowhead
	Mr. Harold Jarvis	SV	60-058	2-87	-arrowheads
	Mr. Ken Wettlaufer	S	60-029 60-069	293	-permission to survey land he rents on Candidate Site
	Mr. Peter Lambrick	S	60-059-01 60-063	292	-permission to survey land he rents on Candidate Site
	Mr. Bill Bousfield	S	60-031 60-032	126-2	-permission to survey land he rents on Candidate Site
	Mrs. Evelyn Gillies	S	60-034	217-2	-permission to survey land rented on Candidate Site

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
	Nilomis Ltd. (Mr. E. van Wasseneer)	S	60-101	272	-permission to survey
	Mr. Verres	S	60-029	-	-permission to survey
	Mr. D. DePaoli	S	60-069	14-2	-permission to survey
	Ms. Audrey Curtis	S	60-071	39-2	-refused permission to survey
	Mrs. Lloyd Moore	S	60-024	781	-refused permission to survey
LF-2N	Mr. & Mrs. Wm. Golden	S	117-248-00	26-1	-arrowheads -historic farm (not standing)
	Edelweiss Farms (Mr. Ken Gibb)	S	117-075	50-2	-cemetery in vicinity -permission to survey
	Knob Hill Farms/ Seven Don Holdings (c/o H.F. Woods)	SV	098-261 098-259	76-2	-cemetery in vicinity
	Mr. J. Todd	SV	96-034	241-2	-cemetery in vicinity
	Mr. R.F. Kilpatrick	SV	96-039	137-1	-Hansa Club has historical background
	Mr. Bunge	SV	96-037	72-1	-house at road line is a designated historic site
	Mr. Wm. Acri	S	117-248 117-077	283	-permission to survey
	Mrs. Baker	S	117-075	-	-permission to survey
	Mrs. Ivan Sparling	S	117-076	218-2	-permission to survey

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
LF-4N	Mr. Joseph Stutt	SV	302-098 and others	244-2	-knew of archaeological site (AiGx-59) on property
	Mr. Roy Bousfield	SV	302-177	501	-arrowhead
	Mrs. Earl Snow	SV	306-175 and others	143-2	-arrowheads and scrapers
	Mrs. G. Love	SV	306-083	100-2	-arrowheads
	Mr. R.F. Kowal	S	306-085	204	-permission to survey
	Mr. Wm. Anderson	S	306-019	5-2	-permission to survey
	Mr. John Reid	SV	306-024	516	-permission to survey land he rents on Candidate Site
	Mr. Smith	SV	306-022	296	-permission to survey land he rents on Candidate Site
PI-13N	Mr. Colin Marshall	S and SV	40-118	1-2 and 239-2	-arrowheads -tombstone on father's property (70-075-01) -permission to survey properties 70-144, 70-074-01, 70-075-01
	Mr. Daniel Jones	S	70-150-01	140-2	-arrowheads
	Mr. John Marshall	SV	60-014-10	210-2	-"Indian burial ground" in vicinity
	Mr. Chris Austin	SV	7-146-00	237-1	-knew of people in the area with arrowheads -pioneer cemetery in vicinity
	Mr. C. Sweetman	SV	70-136	52-2	-arrowhead and "skinning stone"

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
	Ms. A. Glinski	SV	70-145	128-1	-pioneer cemetery in vicinity
	Mr. Adwin Jansen	SV	70-073	270	-stone lid with handle
	Mr. & Mrs. C. McCann	SV	100-008	758	-artifacts found on farm
LF-3C	Mr. Harley Black Mrs. Elinor Black	SV	8-81	-	-artifacts from archaeological site on farm (AfGv-66) -knew other people in area with artifacts -knew about historic houses in area
	Messrs. Harry and Ralph Janssens	S and SV	8-130 8-6	219-2	-artifacts reported from along Beaver Creek -permission to survey property they rent on Candidate Site
	Mr. & Mrs. Norm Vaughan	SV	8-3	90-2	-artifacts found along river -Elcho Church and Cemetery -permission to survey property they rent on Candidate Site
	Mr. Loyal Krick and Krick family	SV	8-129	280-2 281-2	-artifacts from the site vicinity -permission to survey
	Mr. Archie Huizinga	SV	8-79 8-99	83-2	-artifacts from archaeological sites in the vicinity (AfGv-27 and AfGv-28)
	Mr. J. Aantjes	SV	8-125	91-2	-arrowhead
	Mr. & Mrs. G. Gerryts	SV	8-95	224-2	-arrowhead and "hide cleaning tool"
	Mr. & Mrs. Robert Douma	S	8-119	63-2	-old log cabin on property -permission to survey

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
	Mr. Robert Zantingh	SV	8-49	105-2	-old cemetery across road
	Mr. & Mrs. J. Swayze	S	8-127	61-2	-arrowheads -permission to survey
	Mr. Edward Peaire	S	8-3	7-2	-arrowhead, hide scraper
	Mr. George Baarda	S	8-36	854	-cemetery -old bottle found on property
	Dr. Doris Ullman	S	8-3	16-1	-century house
	Mr. Philip Davis	S	8-129	69-1	-arrowheads, "head of a tomahawk", "flints"
	Ms. Wisniewski	S	8-35	65-2	-permission to survey
	Mrs. Elgin Cosby	S	8-4	115-2	-permission to survey
	Mr. Laurie Davis	SV	-	-	-knew of archaeological site in vicinity, collected by a scientist from Royal Ontario Museum
	Elcho Study Committee	-	-	-	-collectively agreed to allow Museum to conduct field survey on the entire Candidate Site
LF-9C	Mr. Y. Flameling	S	10-81	-	-arrowhead -permission to survey
	Mrs. J. Melon	S	10-105	97-2	-permission to survey
	Mrs. Helen Kszan	S	10-80	96-2	-permission to survey -information about barn and reported blacksmith shop on Candidate Site

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
	Mr. Eric Weiss	SV	-	-	-information on archaeological sites in vicinity and about Silverdale Station
	Mrs. Pauline Young	SV	-	-	-information on historic sites in vicinity, including Silverdale Station and Books Garage
	Mrs. P. Maylott	SV	10-77	110-A	-arrowheads -Century House (converted school) adjacent to LF-9C
	Mrs. Zeta Bartlett	-	-	-	-information on "Schram" School adjacent to LF-9C
	Mr. Clarence Beamer	SV	10-100	87-2	-arrowheads -information on history of area
	Mrs. Peter Schuender	SV	7-16 7-15	8-2	-stone axe
LF-1E	Mrs. Bruce Silverthon	S	14-2-53 14-2-17	245-2	-permission to survey
	Mr. & Mrs. J. Morris	SV	14-2-50	71-2	-arrowheads, "tomahawks"
	Mr. David Warner	S	14-2-20	42-2	-grave on Mathew farm
	Mr. & Mrs. Thomas Cowan	S	14-2-18	17-2	-arrowheads, "stone grinding tool" -permission to survey
	Mrs. Wanda Cowan	SV	14-2-92	-	-information on historic houses on the Candidate Site
	Mr. J. Majoros	SV	14-2-35	29-2	-arrowheads beyond Matthews Road
	Mr. Carl Poirier	SV	14-2-30	216-2	-arrowhead adjacent to LF-1E

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
	Mr. Paul Evans	SV	14-1-185	533-G	-fossils
	Mrs. G.W. Morris	SV	14-2-10	112-2	-arrowheads along Lyons Creek
	Mr. Brian McCracken	S	14-2-14-1	77-1	-artifacts in general area
	Mr. Ken Biggar	SV	14-2-89	13-2	-refers to Mr. J. Morris
	Mr. Robert Lundy	SV	14-1-173	677	-arrowheads
	Mr. Ivan Mamchych	S	14-2-23	11-2	-arrowhead, stone axe -permission to survey
	Mrs. A. Warner	S	14-2-55	-	-permission to survey
	Mr. Alvin Chambers	-	-	-	-information on archaeological and historic sites in the vicinity
	Mr. Bun Vigue	S	14-2-20	-	-permission to survey
PI-27E	Mr. Gordon Orr	-	-	-	-information on archaeological and historic sites on and in vicinity of PI-27E
	Mr. Harold Warner	S	14-2-117	93-1	-arrowheads; cannon ball -permission to survey
	Mrs. Marjorie Merritt	SV	14-2-126	109-1	-arrowheads -information on archaeological and historic sites on and in vicinity of PI-27E
	Mr. Charles Warner	S	14-2-118	48-2	-information on archaeological and historic sites on and in vicinity of PI-27E -permission to survey

Candidate Site	Individuals Interviewed	On Site (S) or In Site Vicinity (SV)	Assessment Role Number	Interview Number	Archaeological Resource Comments
	Mr. Edward Hamilton	SV	14-2-75	529-G	-historic material found at the golf course
	Mr. J. Stirling	SV	14-2-125	101-1	-Indians reported to be in the area
	Mr. Tibor Palatine	S	14-2-107	284	-permission to survey land he rents on PI-27E
	Mr. Cliff Biggar	SV	14-2-131	-	-permission to survey field he owns adjacent to PI-27E
	Mr. Frank Smrek	SV	14-2-131	-	-permission to survey land he rents from Mr. Biggar, adjacent to PI-27E
	Ms. Donna Coville	-	-	-	-permission to talk to landowners on and in vicinity of PI-27E and LF-1E

APPENDIX C:

Glossary of Terms

Abrader	Normally a small slab of sandstone worn and polished on one or more surfaces from use in polishing other objects such as celts, or from use in a function similar to that of a whetstone.
AjGw-42	Format of a unique registration number assigned to each archaeological site registered with the Ministry of Citizenship and Culture, also referred to as the "Borden" number (named after its inventor, Dr. Charles Borden). Each "Borden" block, defined by two upper case and two lower case letters, corresponds to a specfic tract of land encompassing an area of 10 minutes latitude by 10 minutes longitude. Every archaeological site registered within that block is assigned a number, commencing with 1. AjGw-42 would therefore be the forty-second site found in block AjGw.
Arrowhead	(see projectile point). Normally a chert artifact attached as the functional end of an arrow.
Biface	Any chert artifact that has been modified by man on both the dorsal and ventral sides by removal of flakes through percussion (hammering) or pressure-flaking (see definition below). Bifaces frequently served as preforms or blanks that were intended for further modification into projectile points or knives.
Celt	A wood-working tool (adze or axe) generally made from ground and polished schist (a hard, dark rock composed of hornblende and quartz). Collectors frequently refer mistakingly to celts as "skinning stones".

Chert	(also referred to as flint) A naturally-occuring sedimentary rock composed primarily of quartz (crystallized silica). Chert can be easily fractured and flaked by means of percussion or pressure-flaking, and was the primary material used by native aboriginals to make a variety of lithic artifacts including bifaces, projectile points, scrapers, and knives. Chert occurs in limestone and dolomite formations as nodules or bedded layers.
Chipping detritus	Term for the waste flakes generated from the reduction of a chert nodule into an artifact, or from the modification of an artifact (removal of small flakes), by means of percussion or pressure-flaking.
Core	The central portion of a nodule of chert remaining after flakes have been removed from its exterior. A nodule of chert occurs naturally, and a core may represent the portion of this nodule remaining after any number of flakes have been removed from it by man through percussion or pressure-flaking.
Debitage	Same as chipping detritus.
Findspot	Any locality where a single man-made artifact, or group of two to ten related man-made artifacts, may be found. Findspots are distinguished from other types of sites by their limited size and content.
Flake	Normally a flake of chert removed by man from a chert nodule, core, or artifact.
Ground Stone Fragment	Any stone fragment that has been ground or polished. Normally ground stone fragments are pieces of schist

broken or discarded from the manufacture of celts.

Lithic artifact — Any artifact made of stone, but generally this term refers to an artifact made from chert, such as biface, projectile point, knife, or scraper.

Midden — Garbage dump or place where refuse was purposefully deposited. On native archaeological sites, predominantly village sites, middens are generally less than 20 m in diameter and consist of concentrations of artifacts and refuse in a matrix of black organic soil.

Percussion — A means of knapping (working) chert and other types of stone by striking or hammering with a hard object. In chert-knapping, percussion may include striking a chert nodule, core, or artifact with an object such as the blunt end of an antler, to remove large flakes.

Pressure-flaking — A means of knapping (working) chert by pressure applied or transmitted through a hand-held stylus such as the tip of an antler. The stylus is held against the edge of a lithic artifact and pressure is applied, resulting in the removal of small flakes. This process is normally used in the final stages of knapping for fine detail, such as the final shaping and sharpening of a lithic artifact.

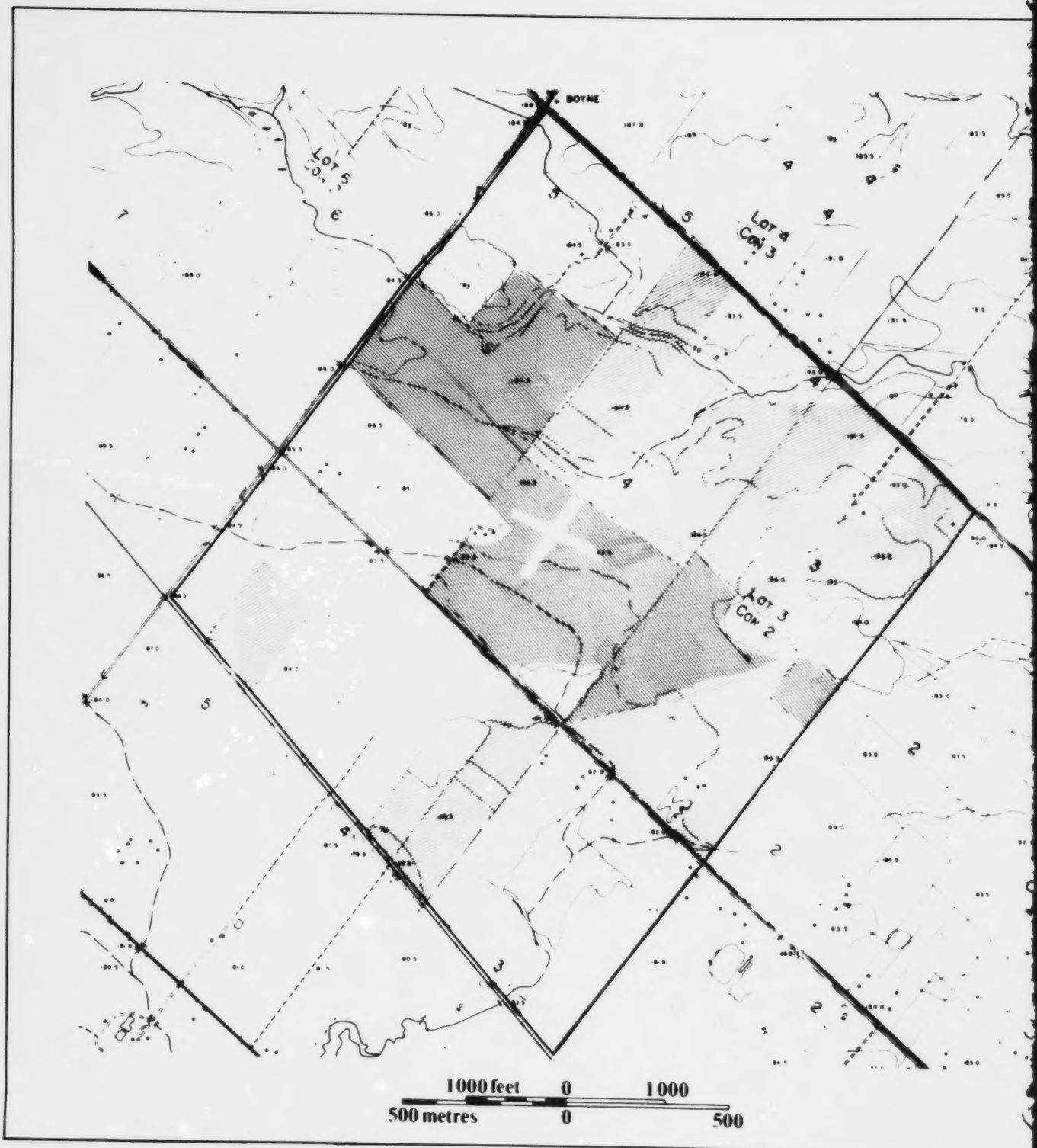
Projectile Point — (see arrowhead)
Technically, arrowheads were hafted on arrow shafts fired from a bow, but projectile point is a more encompassing term to include points hafted on spears and thrown or thrust like a javelin.

Retouch — The process by which small flakes are removed from a

	lithic artifact, predominantly by means of pressure-flaking. This process is used to transform a biface into a projectile point or to straighten, sharpen, or otherwise modify the edge of a chert flake or artifact.
Scraper	Generally a chert flake that has been modified by deliberate retouch to create a scraping surface. Scrapers were frequently used to remove flesh from hides or to remove flesh and muscles from bone.
Site	Any location exhibiting use by man, either prehistorically or historically, and ranging from a single artifact to a large village or town.
Utilized flake	A flake of chert exhibiting wear patterns from use in a scraping function, but not otherwise modified by man (i.e. not retouched prior to use, as in the case of a scraper). Frequently, waste flakes from the manufacture of lithic artifacts were simply picked up, used to scrape a hide, bone, or piece of wood, and then discarded, but evidence for their use in such a function remains as a series of scars along a lateral edge where micro-flakes were broken off from such use.

APPENDIX D:

Maps of Areas Surveyed on
Each Candidate Site



Map 1: Area Surveyed on PI-1N

OWMC Ontario Waste Management Corporation

Consultant:
MUSEUM OF INDIAN ARCHAEOLOGY

ARCHAEOLOGICAL RESOURCES **PI-1 North**

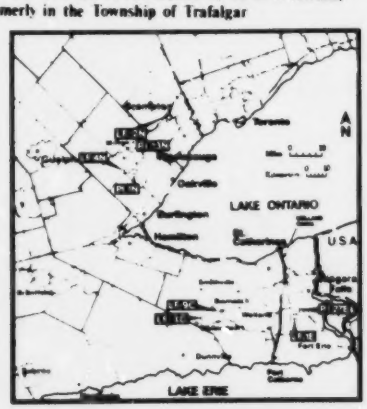
Areas Surveyed by the Museum during Phase 4A

Areas surveyed by the Museum in June/July 1984 for Walker Wright Young Associates (Halton Region Landfill Environmental Assessment Halton Region Candidate Site D)

Acquisition Boundary —— Study Area Boundary

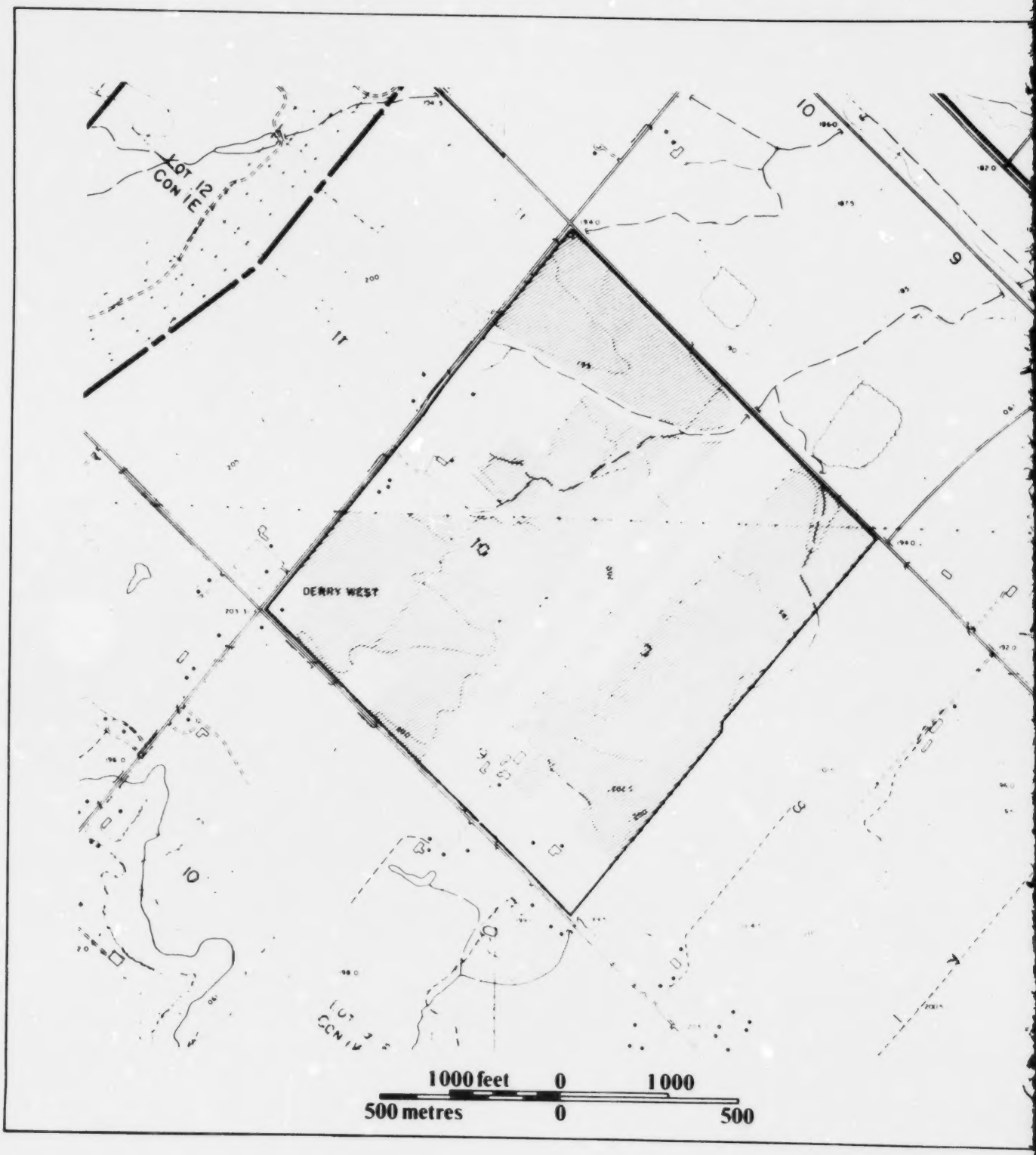
Key Map **PI-1 North**

Lots 3, 4 and 5; Concession II; Town of Milton; Parts of Lots 3, 4 and 5; Concession I; Town of Milton, formerly in the Township of Trafalgar



PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985



Map 2: Area Surveyed on LF-2N

OWMC Ontario Waste Management Corporation

Consultant:
MUSEUM OF INDIAN ARCHAEOLOGY

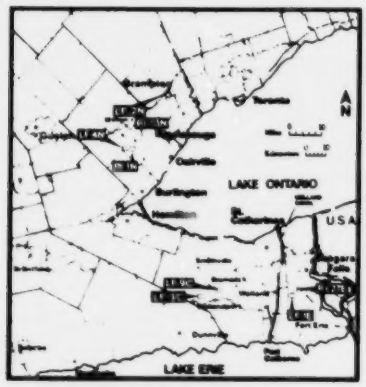
ARCHAEOLOGICAL RESOURCES LF-2 North

Areas Surveyed by the Museum during Phase 4A

Acquisition Boundary —— Study Area Boundary

Key Map: LF-2 North

Lots 9 and 10; Concession I EHS (East of Hurontario Street), City of Mississauga



PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985

Map 3: Area Surveyed on LF-4N

OWMC Ontario Waste Management Corporation

Consultant:

MUSEUM OF INDIAN ARCHAEOLOGY

ARCHAEOLOGICAL RESOURCES LF-4 North

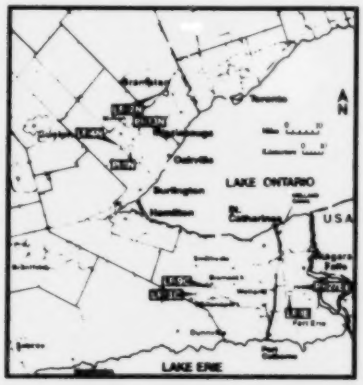
Areas Surveyed by the Museum during Phase 4A

Areas surveyed by the Museum in June/July 1984 for Walker Wright Young Associates (Halton Region Landfill Environmental Assessment, Halton Region Canadidate Site E)

Acquisition Boundary —— Study Area Boundary

Key Map: LF-4 North

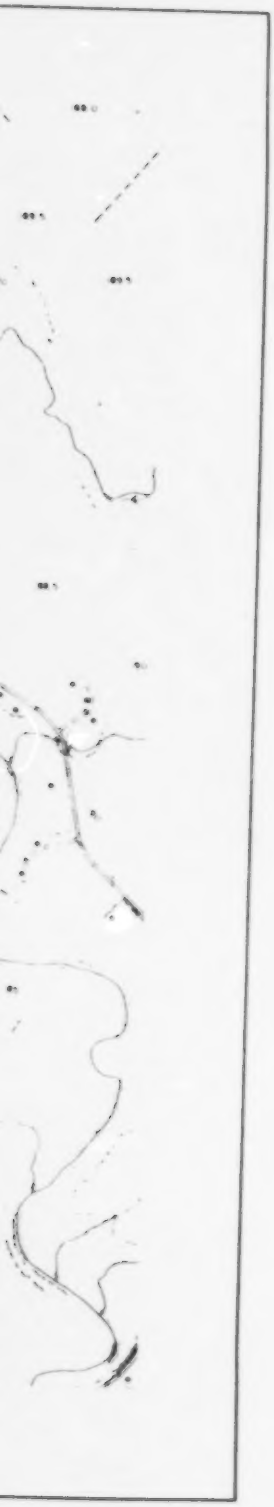
Lots 6 and 7; Concession VII; Town of Milton, formerly in the Township of Nelson



PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985

Map 4: Area Surveyed on PI-13N



OWMC Ontario Waste Management Corporation

Consultant

MUSEUM OF INDIAN ARCHAEOLOGY

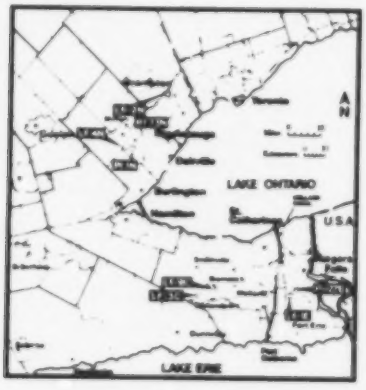
ARCHAEOLOGICAL RESOURCES PI-13 North

☐ Areas Surveyed by the Museum during Phase 4A

Acquisition Boundary —— Study Area Boundary

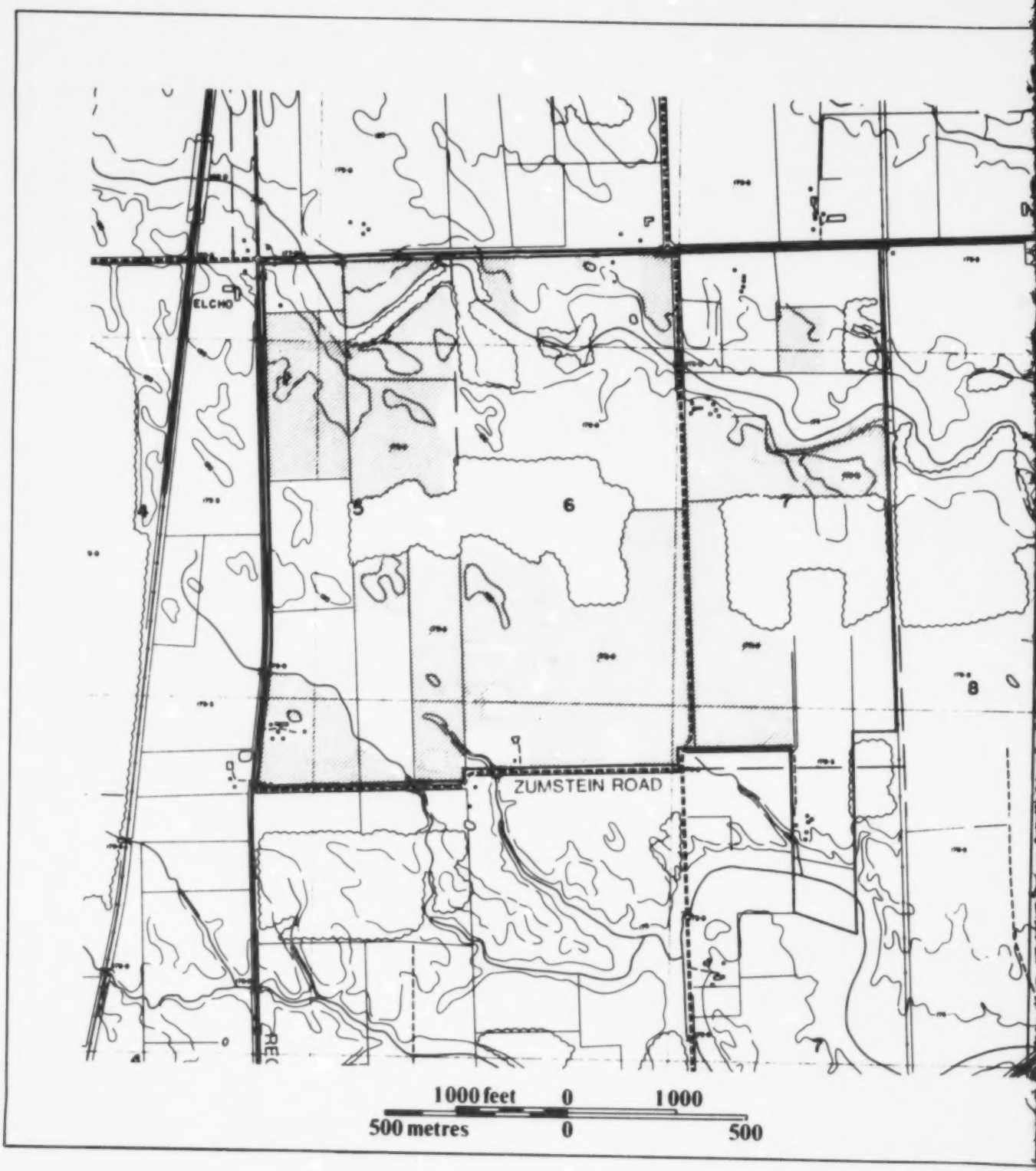
Key Map **PI-13 North**

Lots 3 and 4; Concession VI; Town of Milton, formerly the township of Trafalgar

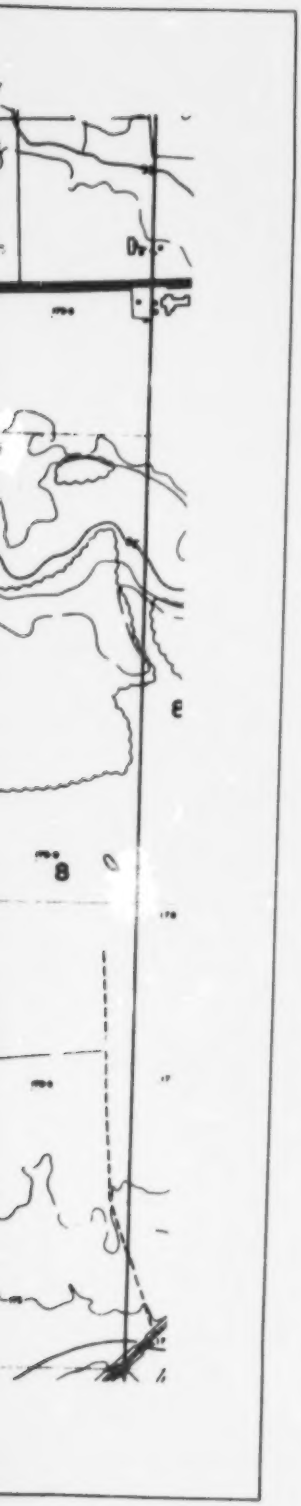


PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985



Map 5: Area Surveyed on LF-3C



OWMC Ontario Waste Management Corporation

Consultant

MUSEUM OF INDIAN ARCHAEOLOGY

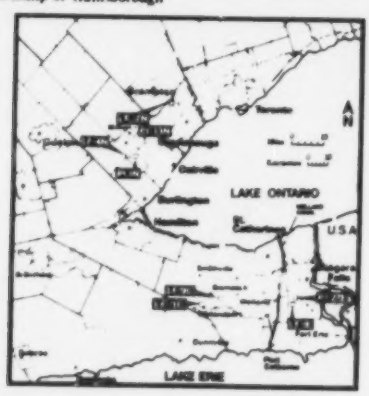
ARCHAEOLOGICAL RESOURCES LF-3 Central

Areas Surveyed by the Museum during Phase 4A

Acquisition Boundary —— Study Area Boundary

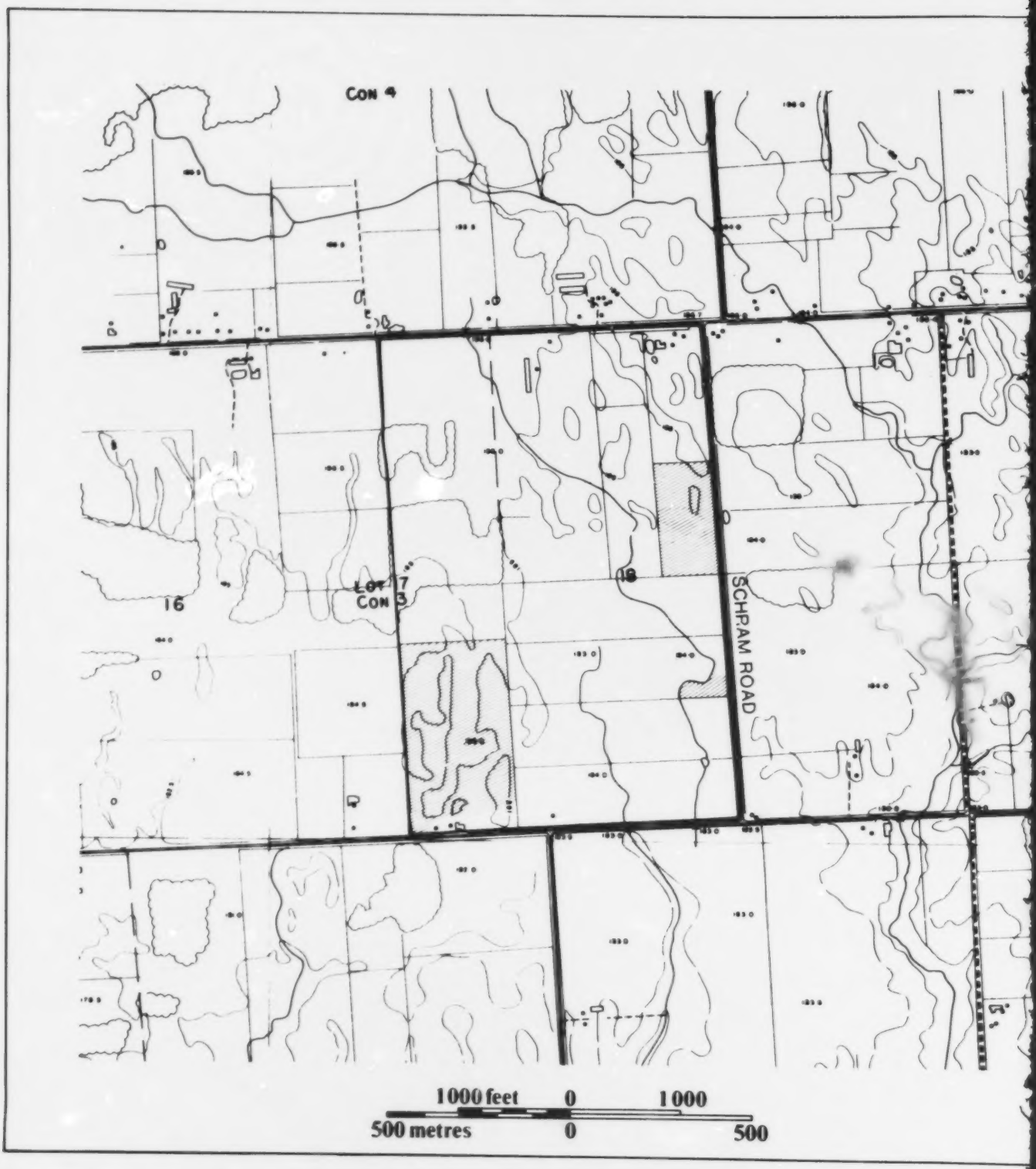
Key Map LF-3 Central

Lots 5, 6 and 7; Concession 1; Part of Lot 7; Broken Front Concession; Township of West Lincoln; formerly in the Township of Gainsborough

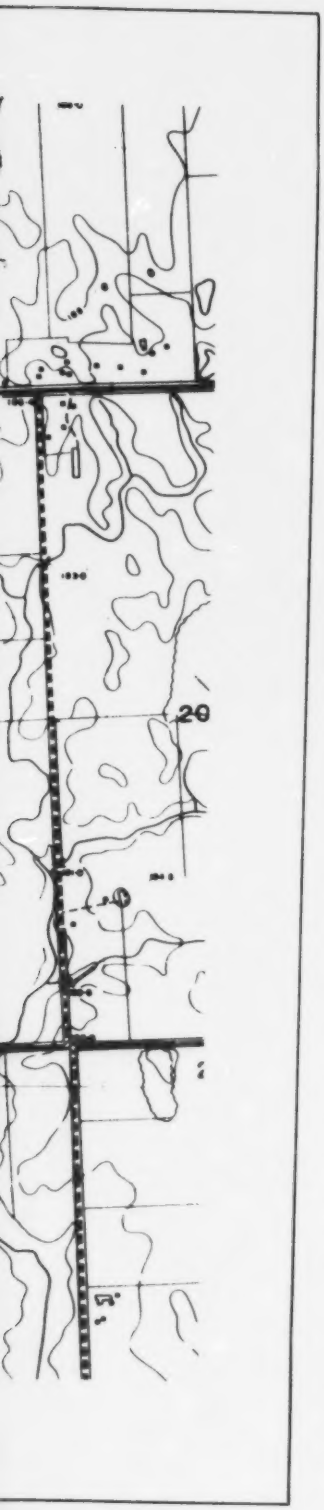


PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985



Map 6: Area Surveyed on LF-9C



OWMC Ontario Waste Management Corporation

Consultant:
MUSEUM OF INDIAN ARCHAEOLOGY

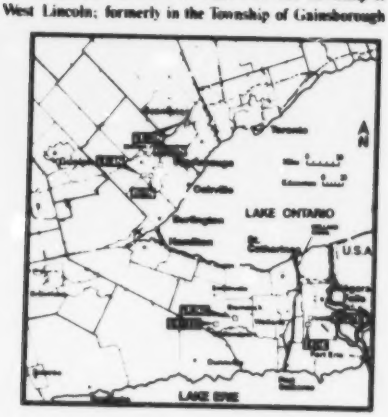
ARCHAEOLOGICAL RESOURCES **LF-9 Central**

Areas Surveyed by the Museum during Phase 4A

Acquisition Boundary —— Study Area Boundary

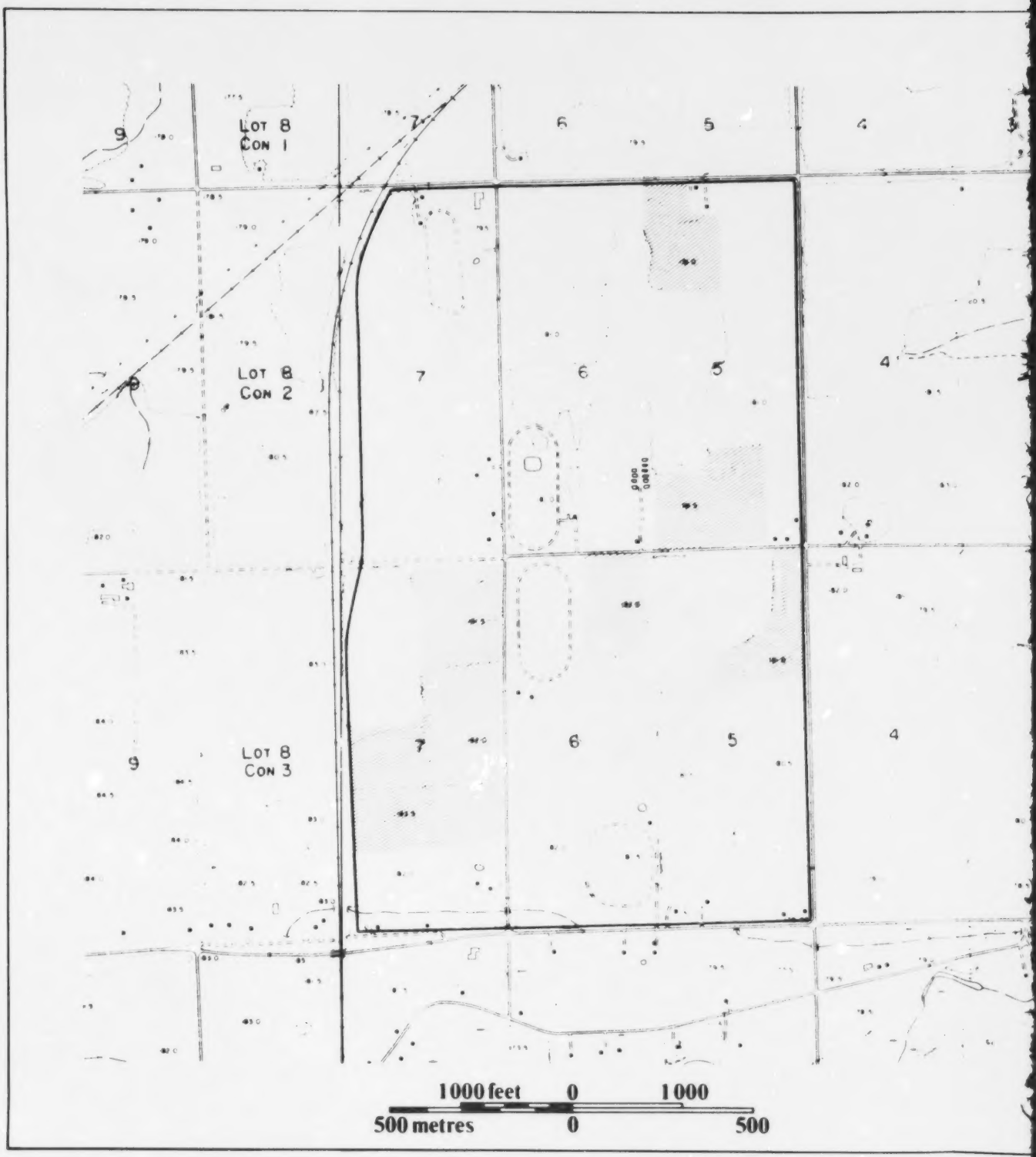
Key Map: **LF-9 Central**

Lot 18 and Part of Lot 17; Concession III; Township of West Lincoln; formerly in the Township of Gainsborough

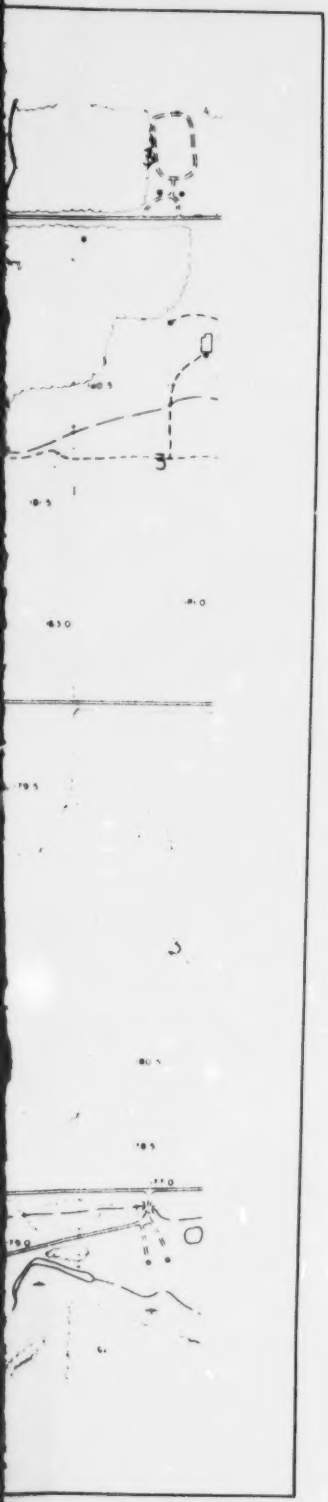


PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985



Map 7: Area Surveyed on LF-1E



OWMC Ontario Waste Management Corporation

Consultant:
MUSEUM OF INDIAN ARCHAEOLOGY

ARCHAEOLOGICAL RESOURCES LF-1 East

Areas Surveyed by the Museum during Phase 4A

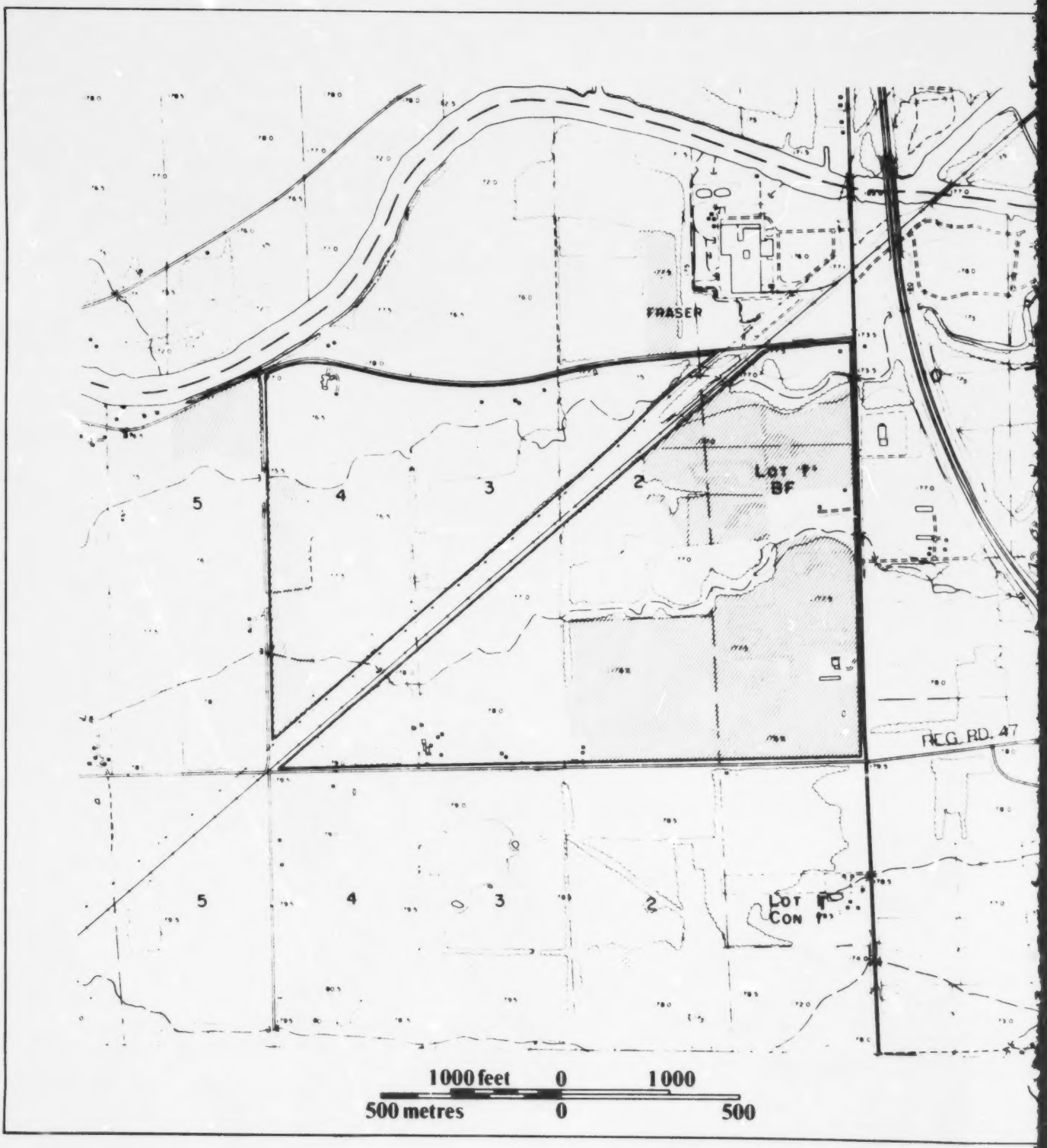
Acquisition Boundary —— Study Area Boundary

Key Map LF-1 East

Lots 5, 6 and 7; Concessions II and III; City of Niagara Falls; formerly in the Township of Crowland

PHASE 4A DETAILED COMPARATIVE EVALUATION

MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985



Map 8: Area Surveyed on PI-27E

OWMC Ontario Waste Management Corporation

Consultant:
MUSEUM OF INDIAN ARCHAEOLOGY

ARCHAEOLOGICAL RESOURCES **PI-27 East**

Areas Surveyed by the Museum during Phase 4A

Acquisition Boundary —— Study Area Boundary

Key Map **PI-27 East**

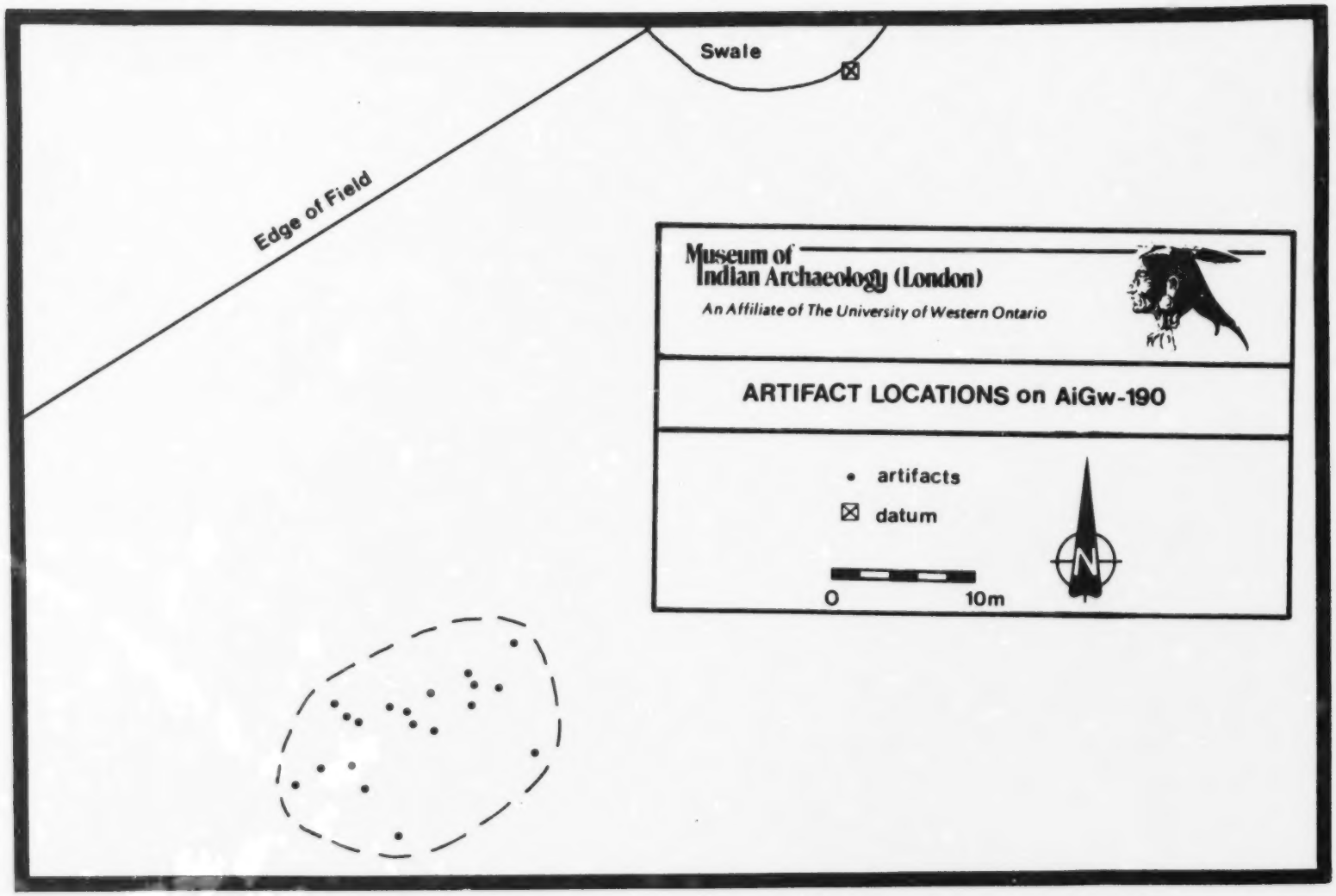
Part of Lots 1, 2, 3, and 4; Broken Front Concession Welland River; City of Niagara Falls; formerly in the Township of Crowland

PHASE 4A DETAILED COMPARATIVE EVALUATION

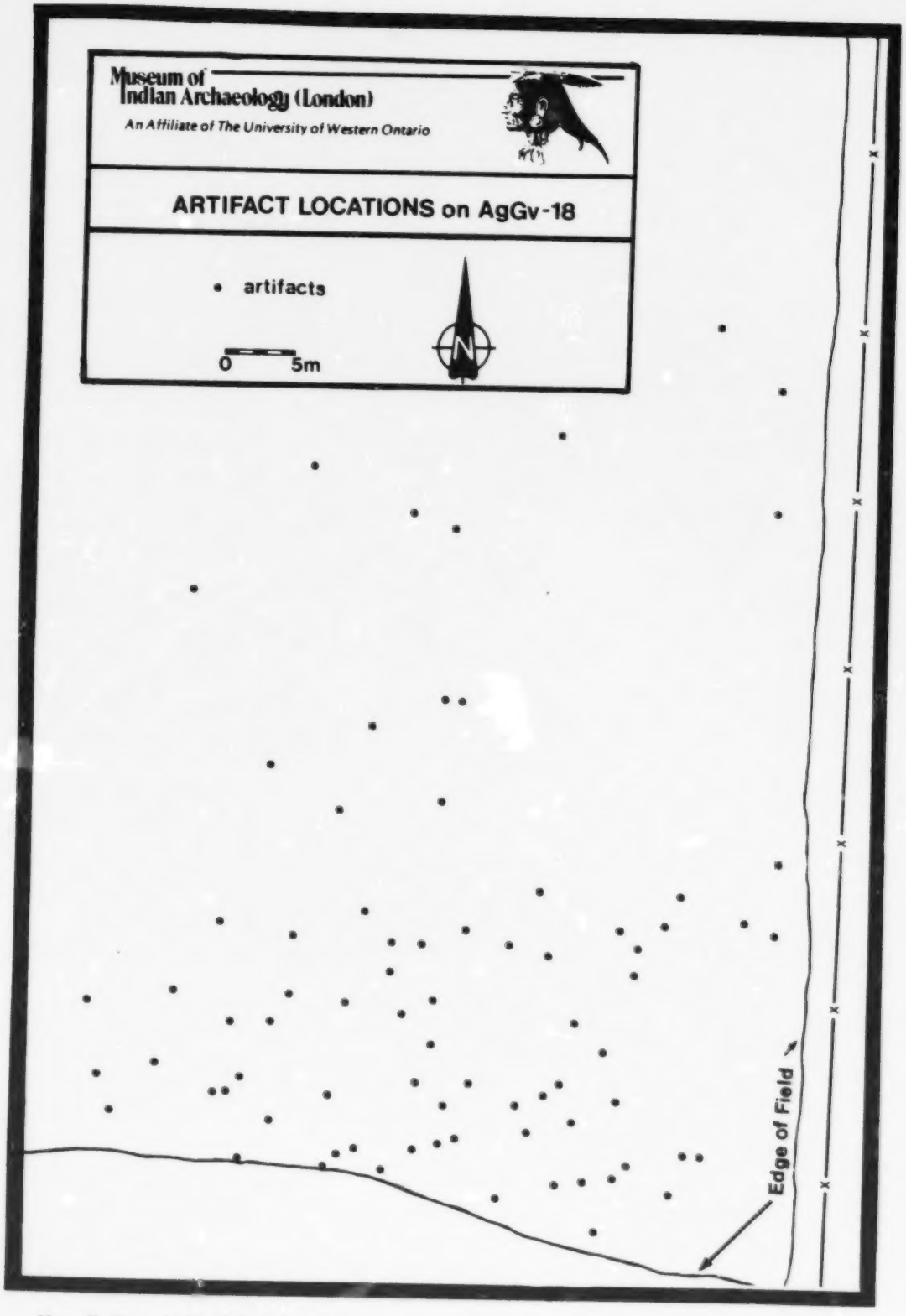
MUSEUM OF INDIAN ARCHAEOLOGY(LONDON), APRIL 1985

APPENDIX E:

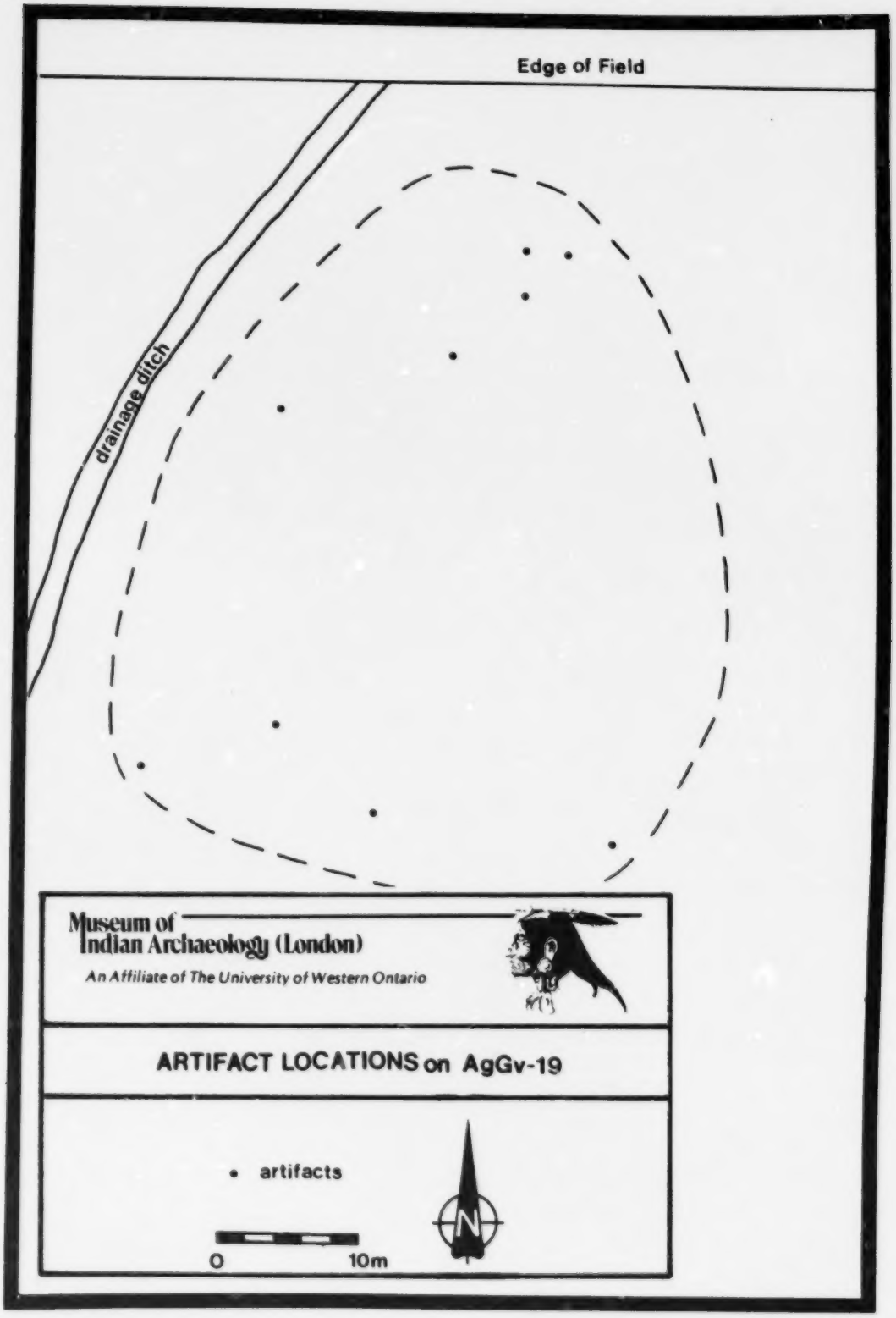
Maps of Artifact Locations on Some of the Significant Archaeological Sites Documented



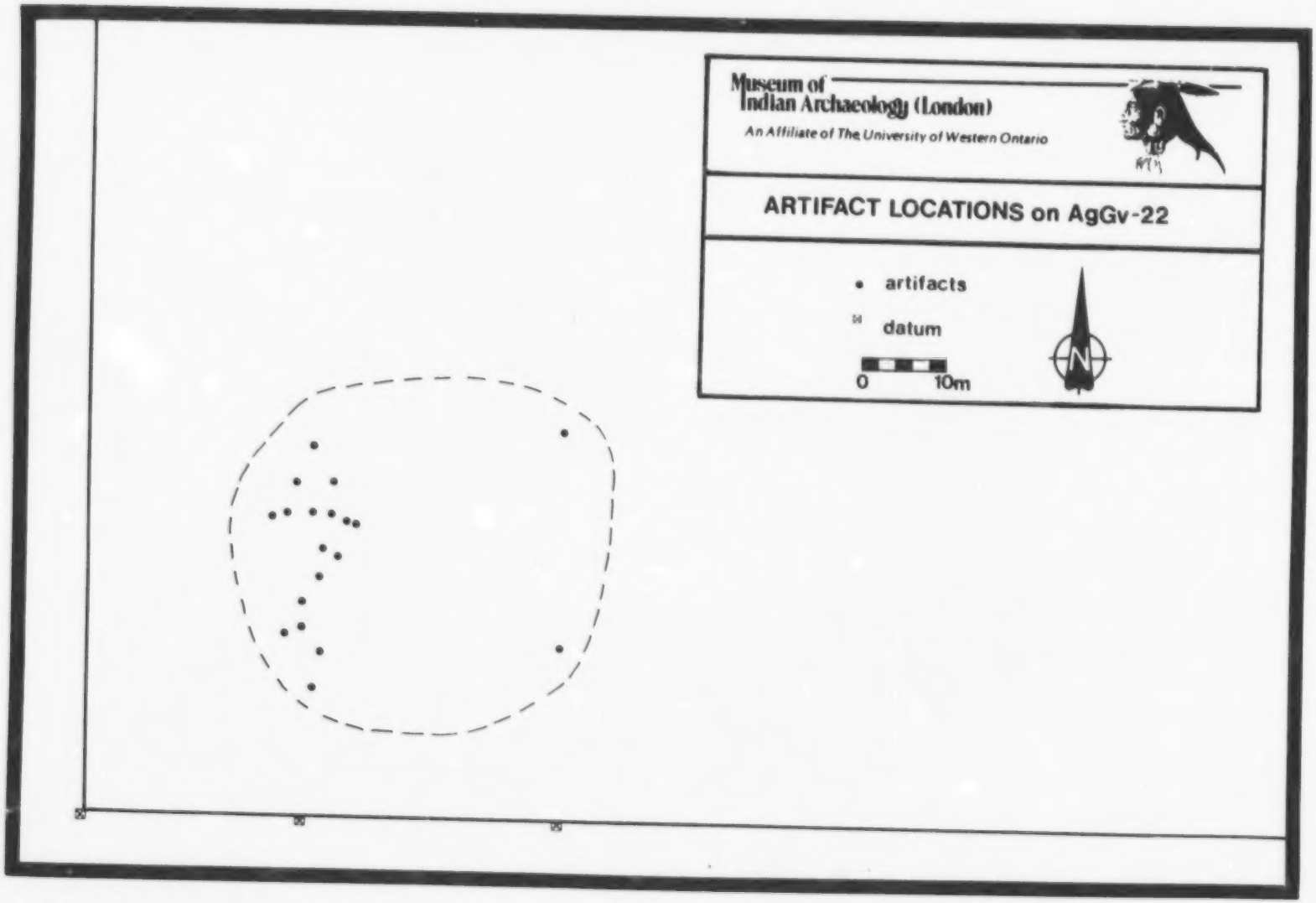
Map E-1: AiGw-190 (PI-1N)



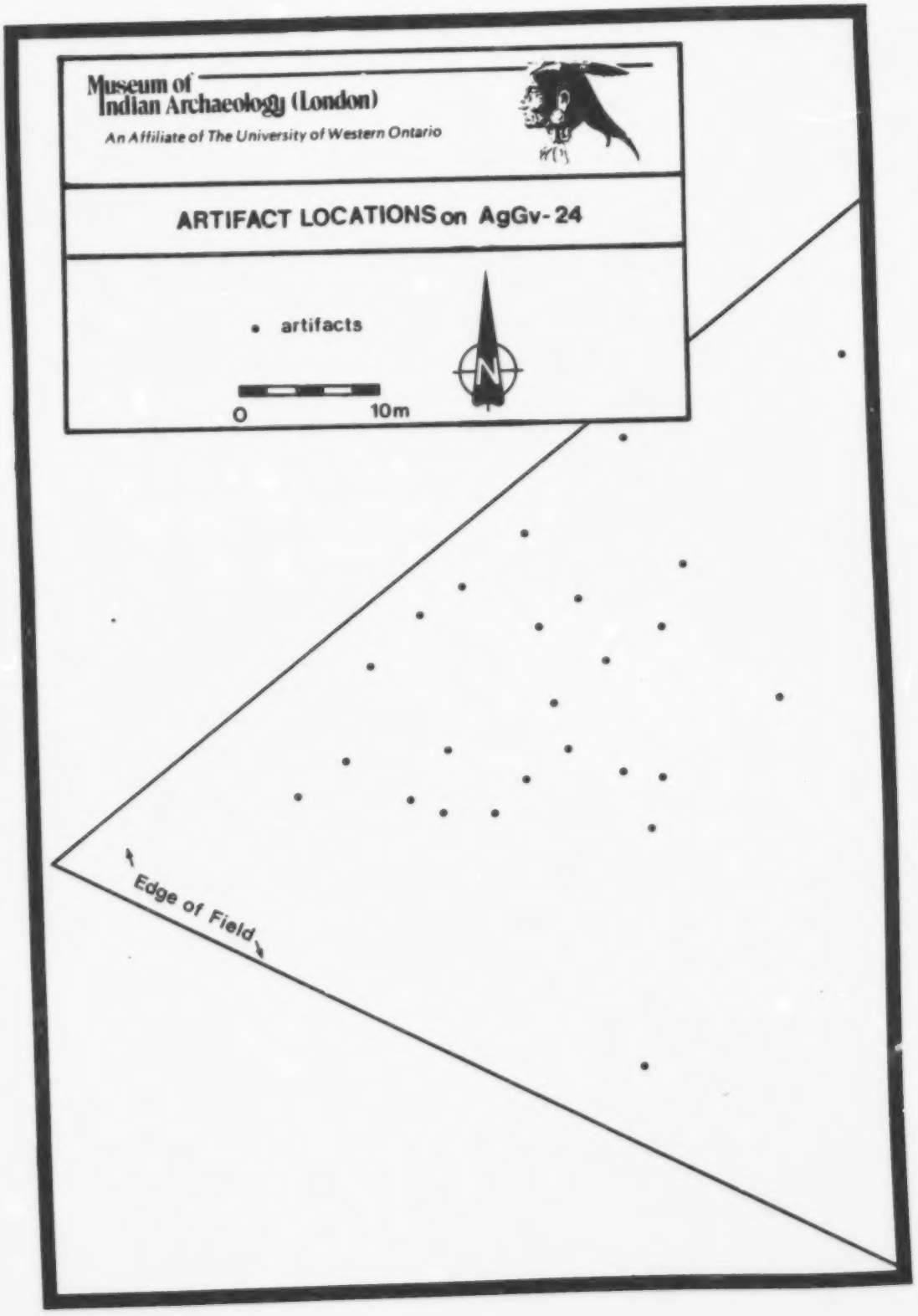
Map E-2: AgCv-18 (LF-3C)



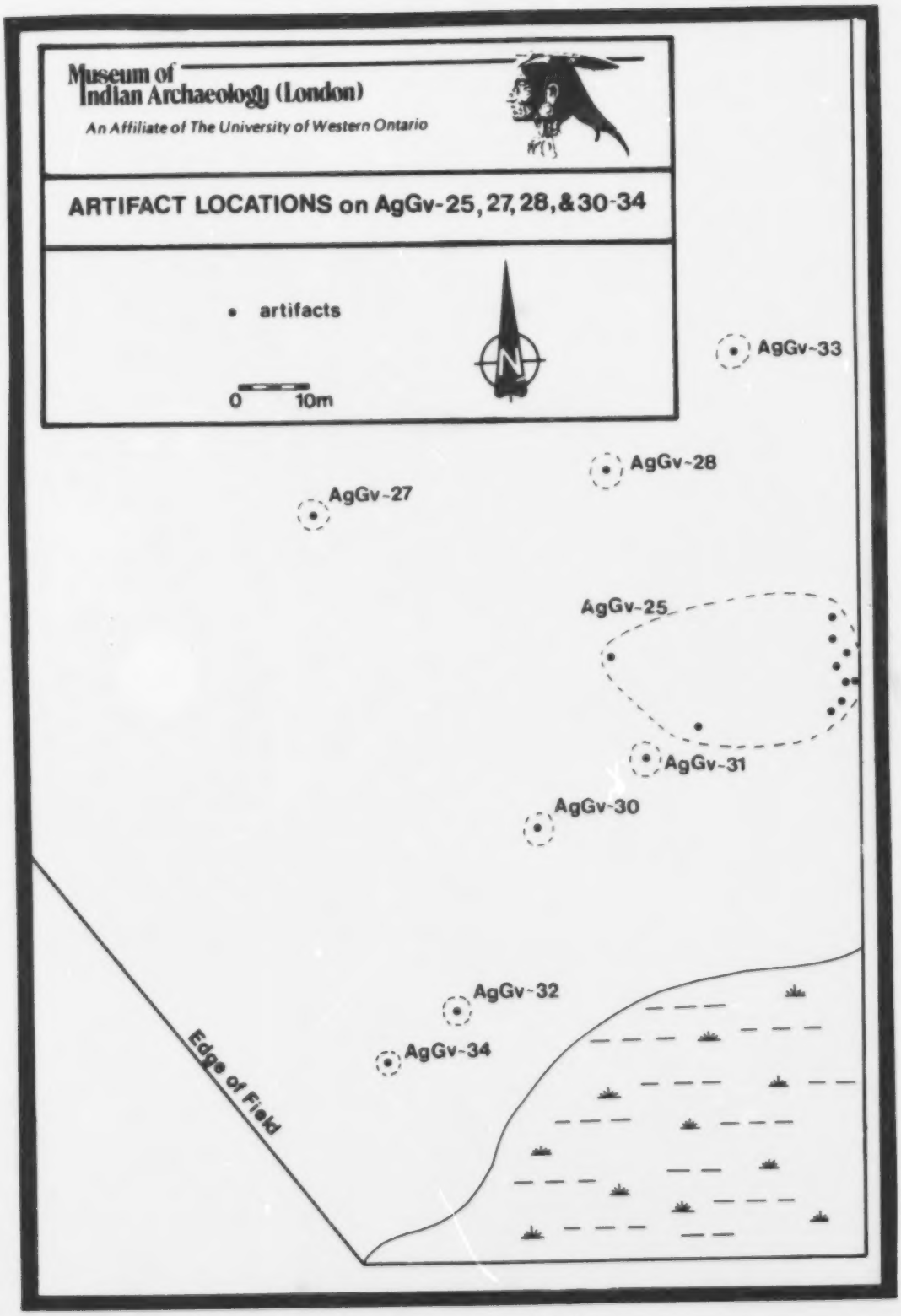
Map E-3: AgGv-19 (LF-3C)



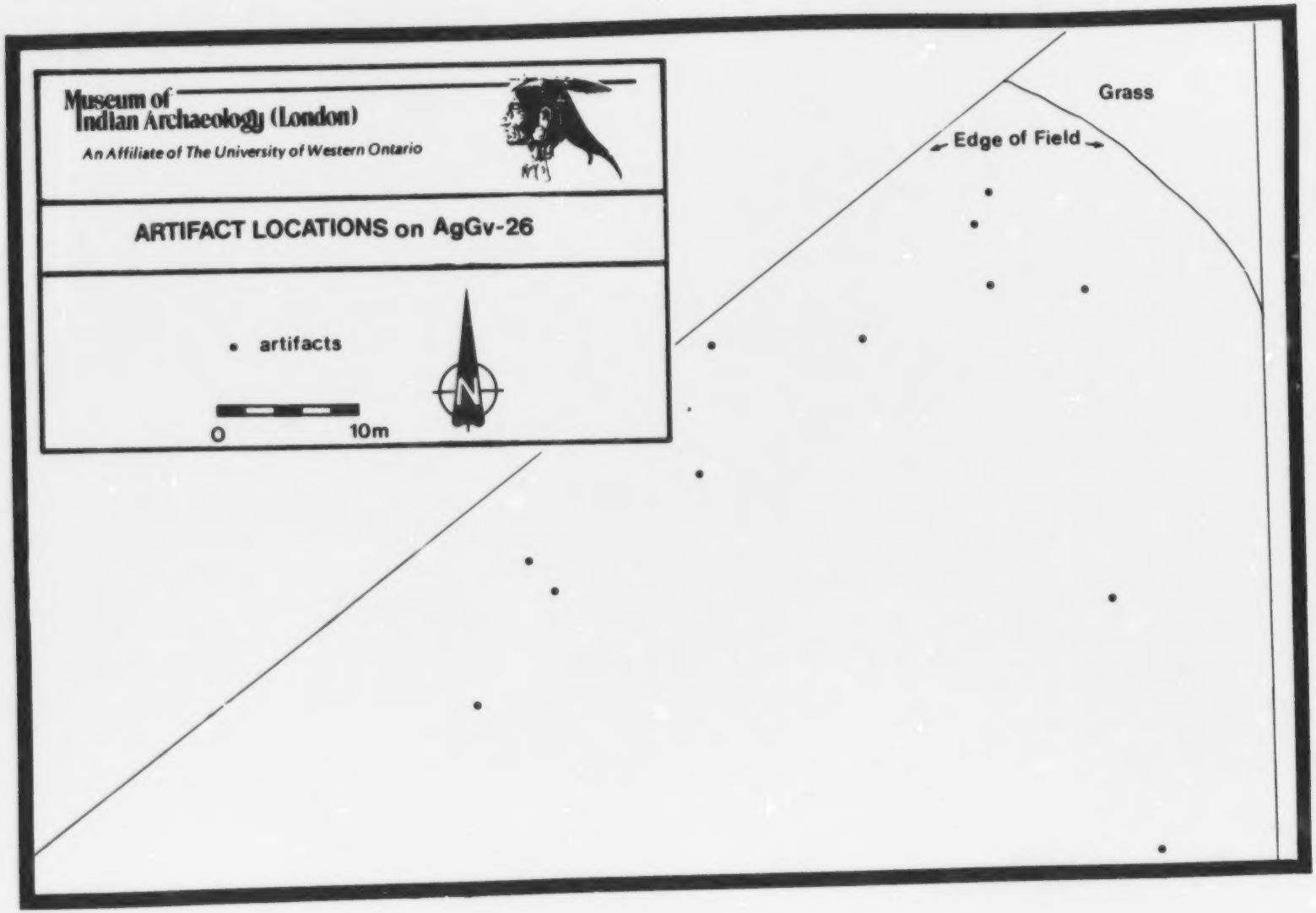
Map E-4: AgGv-22 (LF-3C)



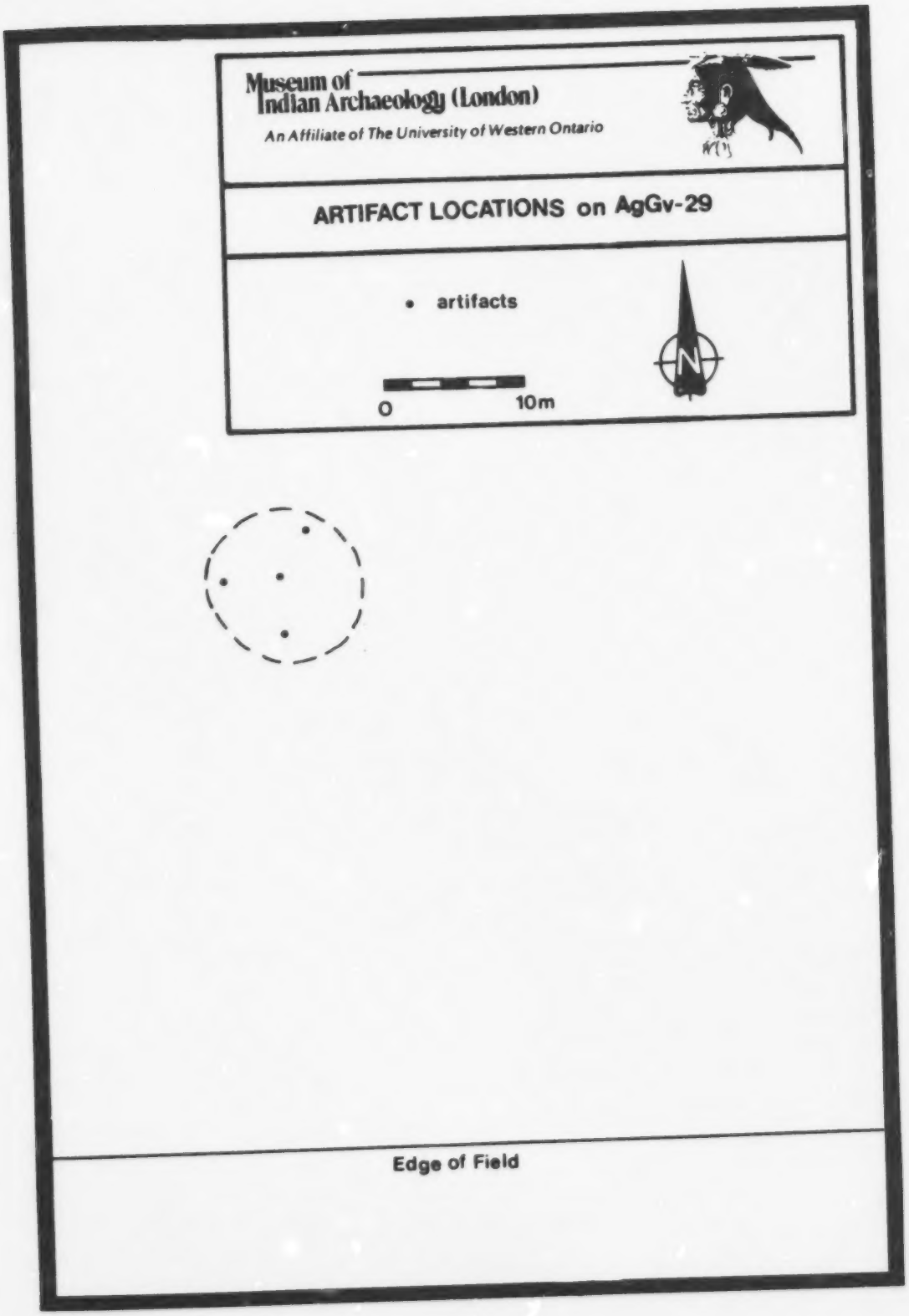
Map E-5: AgGv-24 (LF-3C)



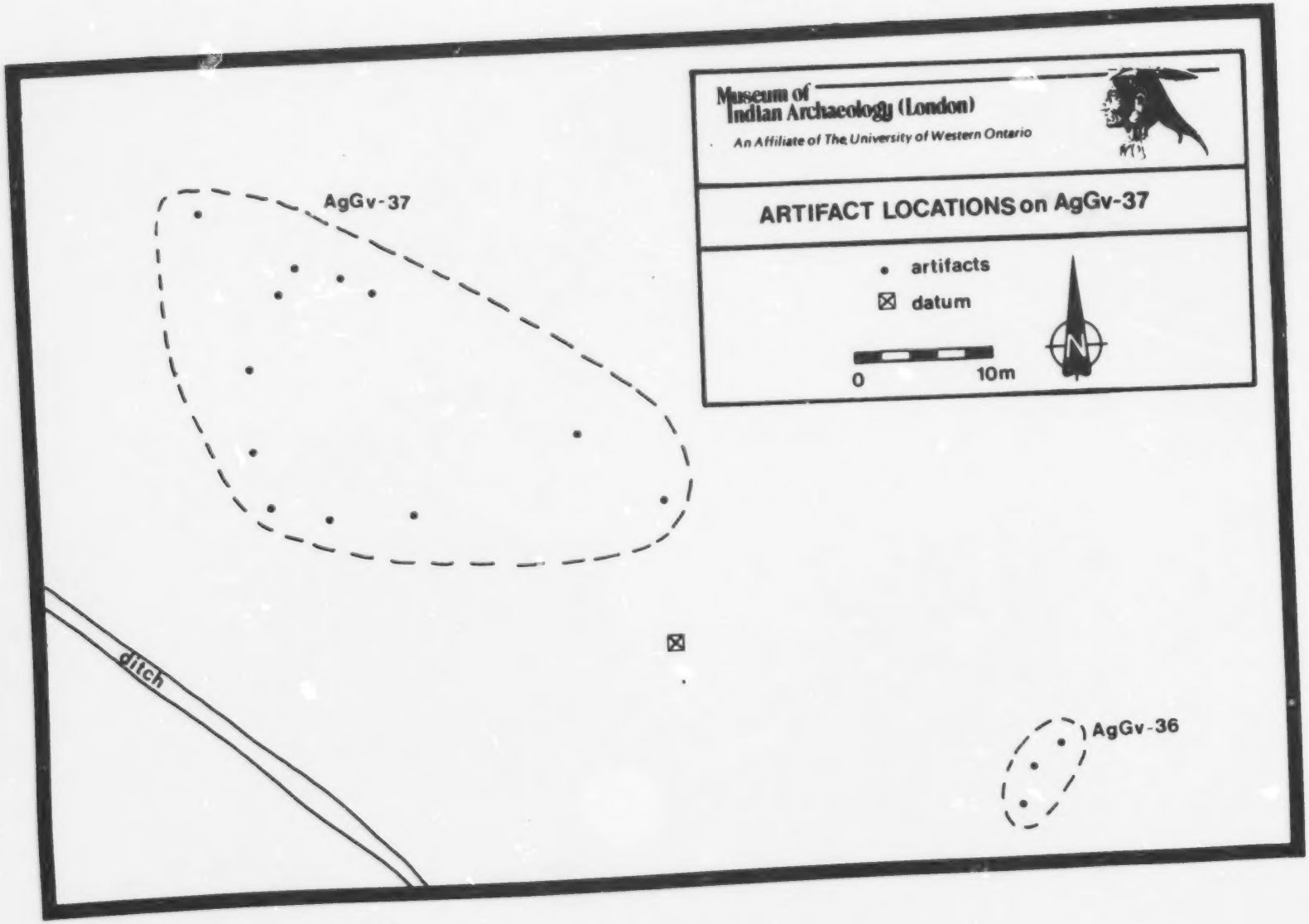
Map E-6: AgGv-25, 27, 28, 30 to 34 (LF-3C)



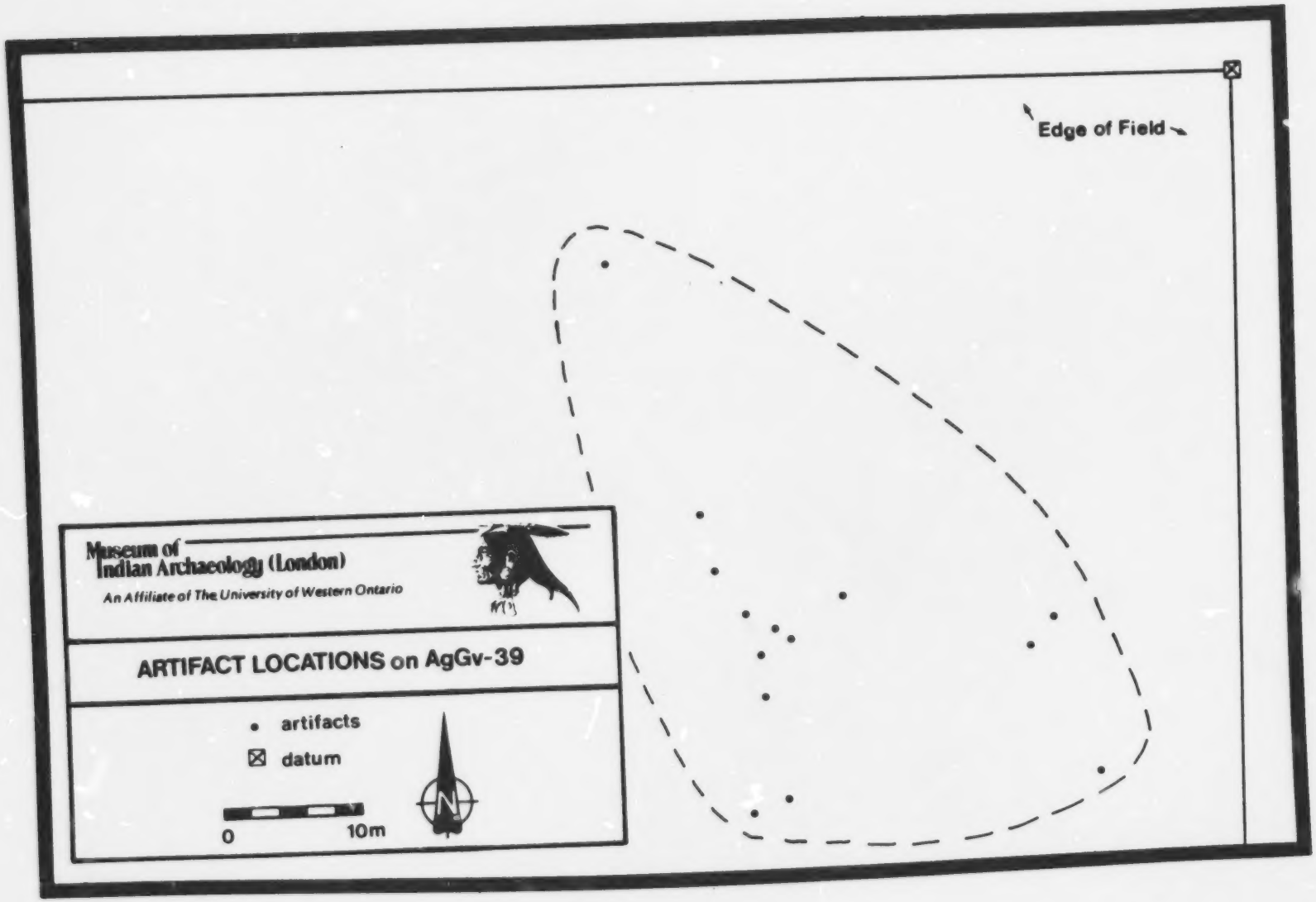
Map E-7: AgGv-26 (LF-3C)



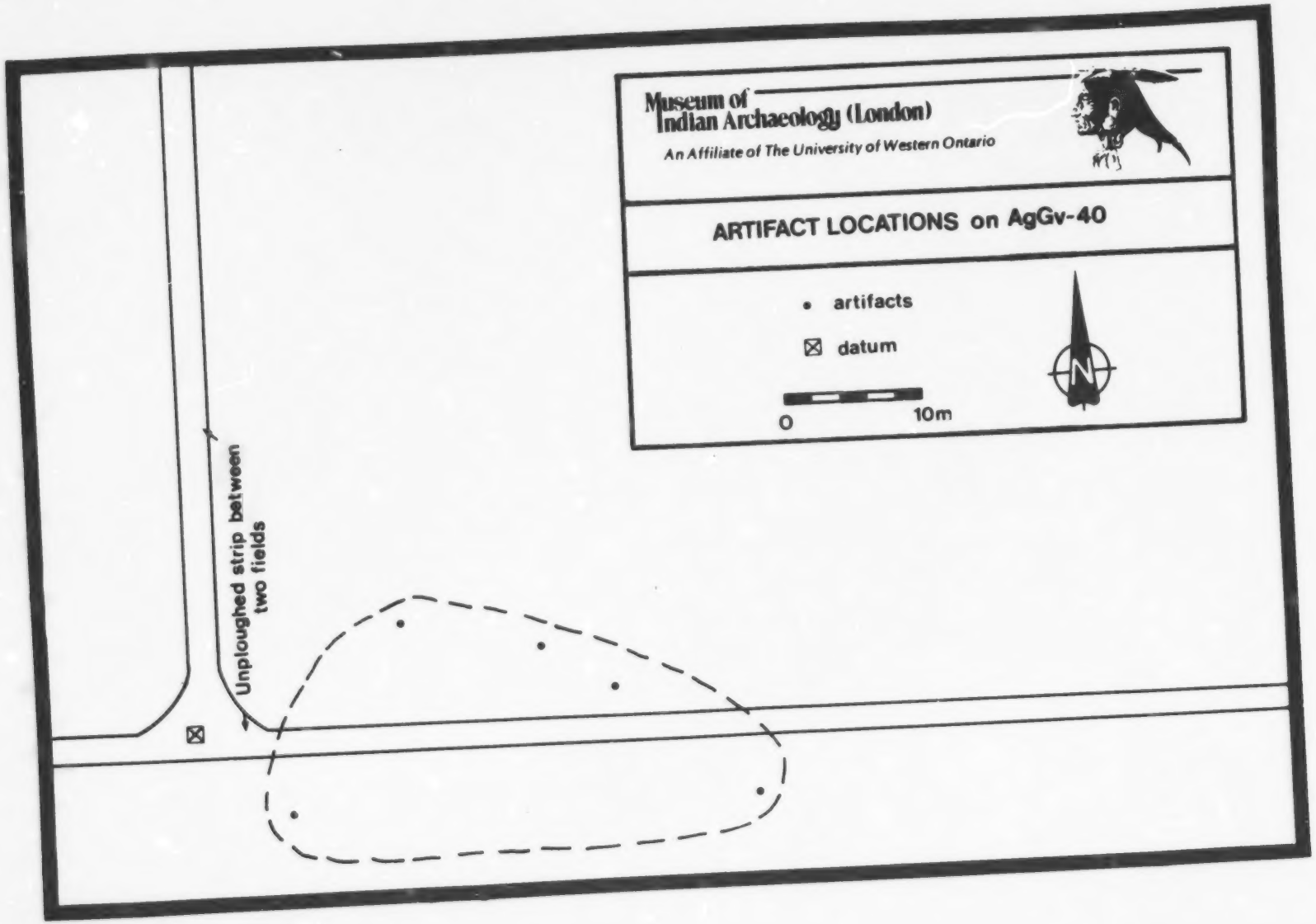
Map E-8: AgGv-29 (LF-3C)



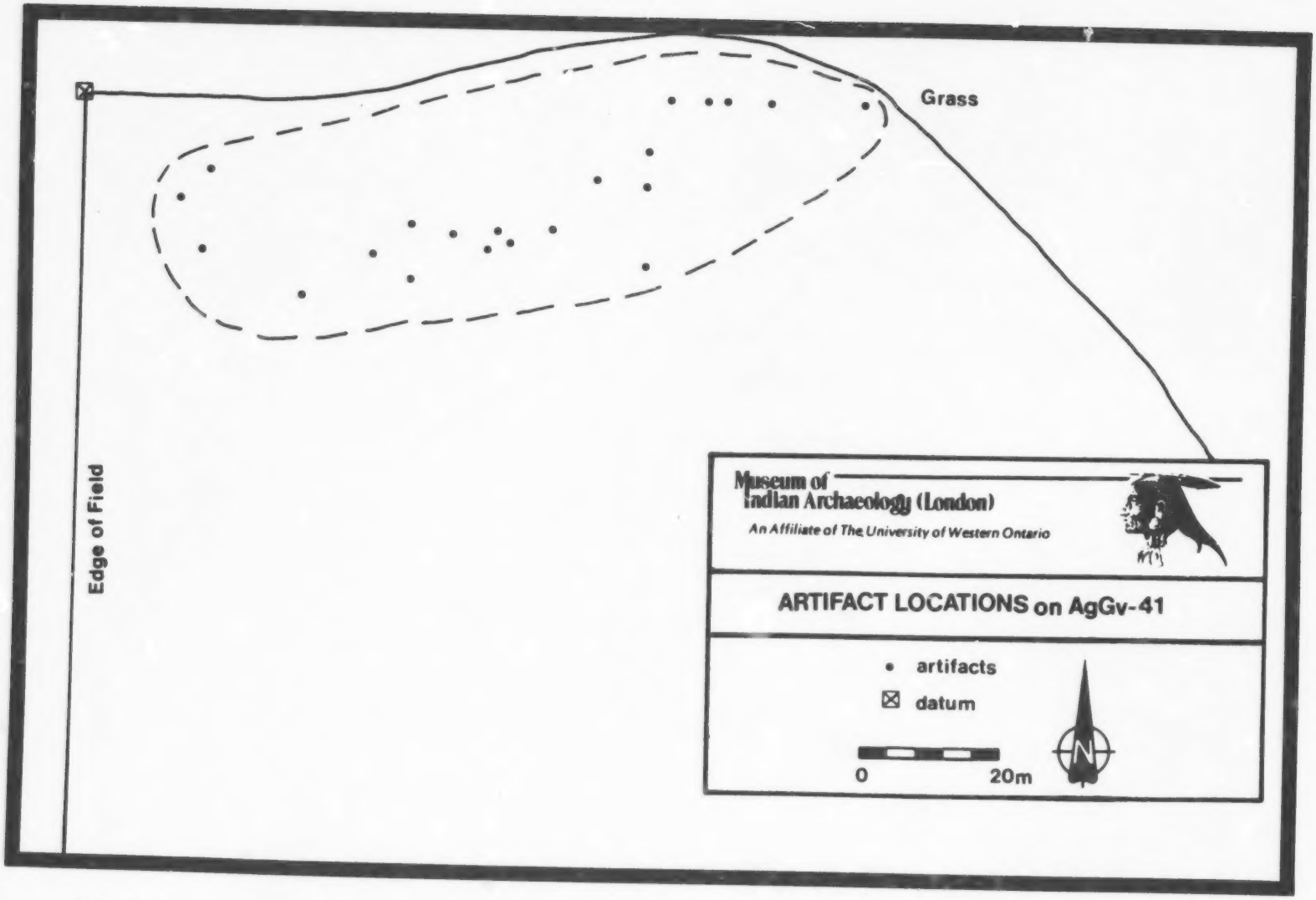
Map E-9: AgGv-37 (LF-3C)



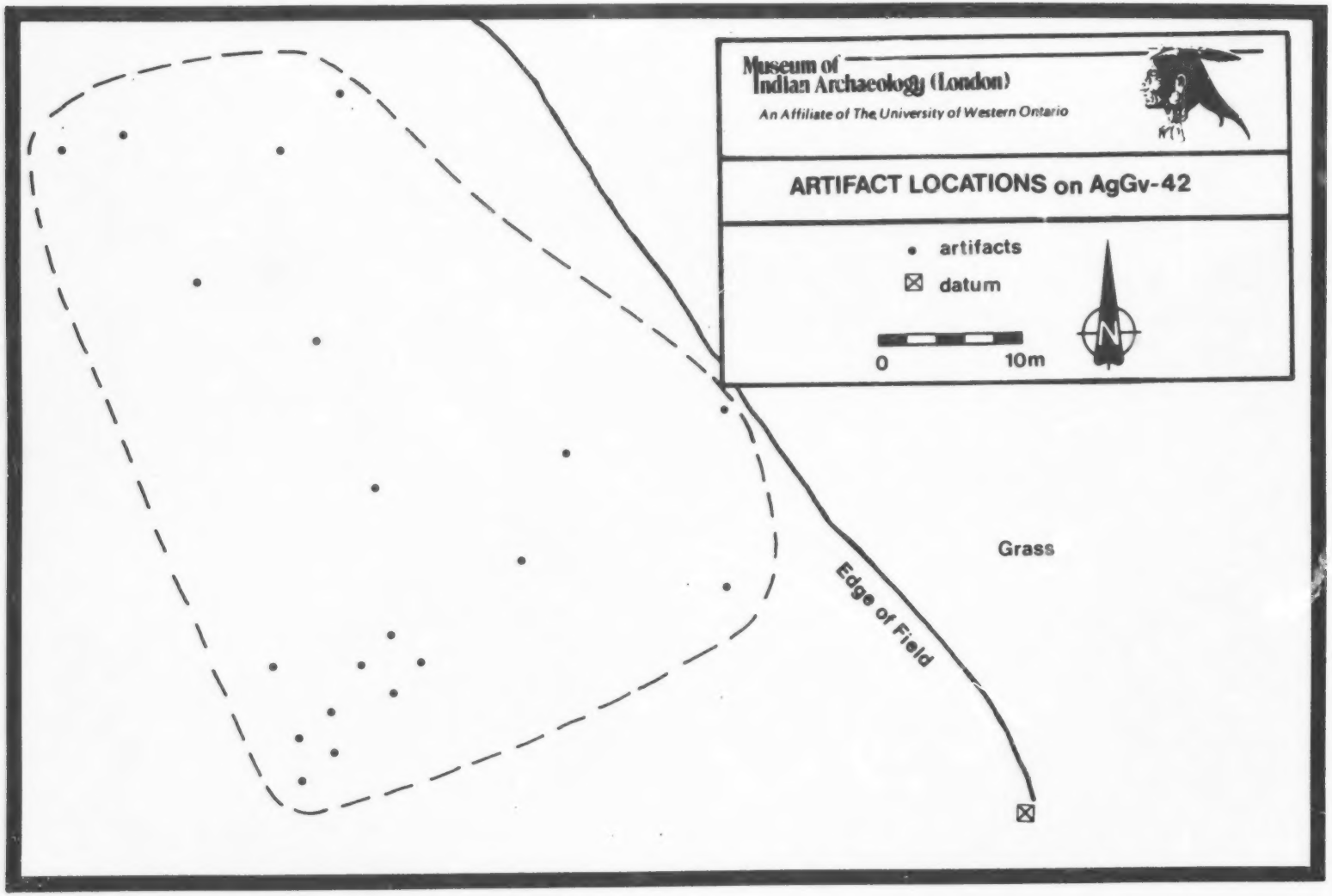
Map E-10: AgGv-39 (LF-3C)



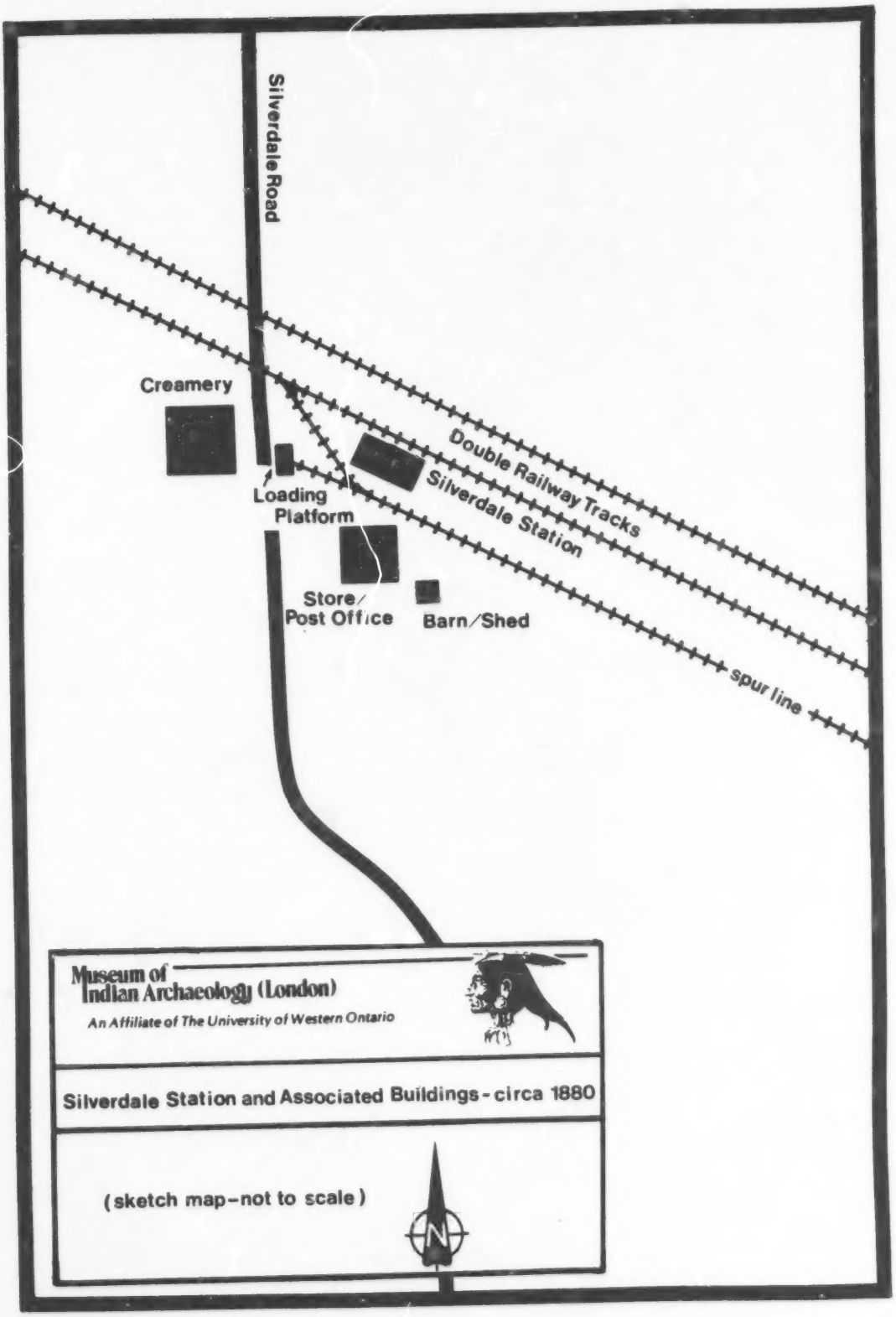
Map E-11: AgGv-40 (LF-3C)



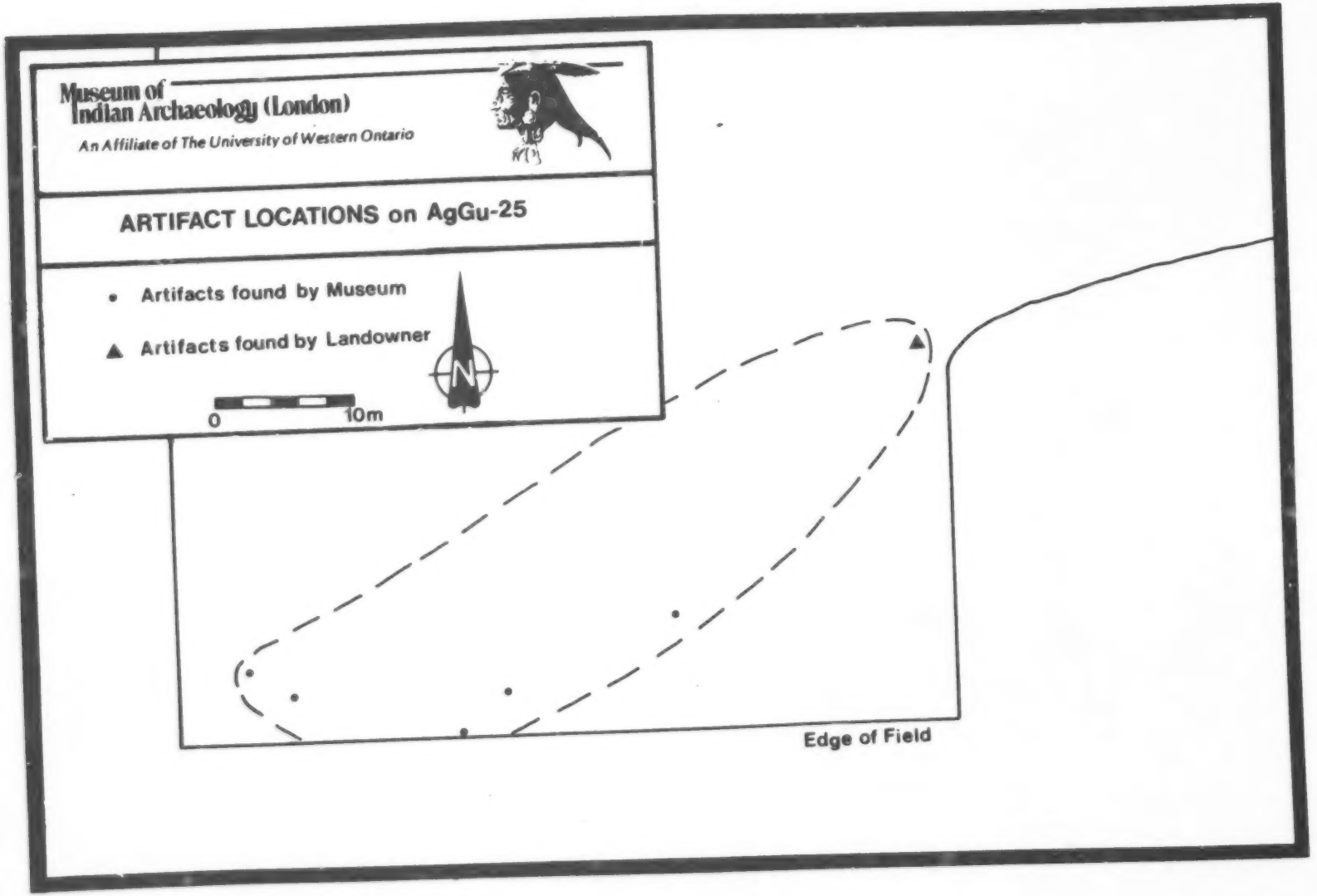
Map E-12: AgGv-41 (LF-3C)



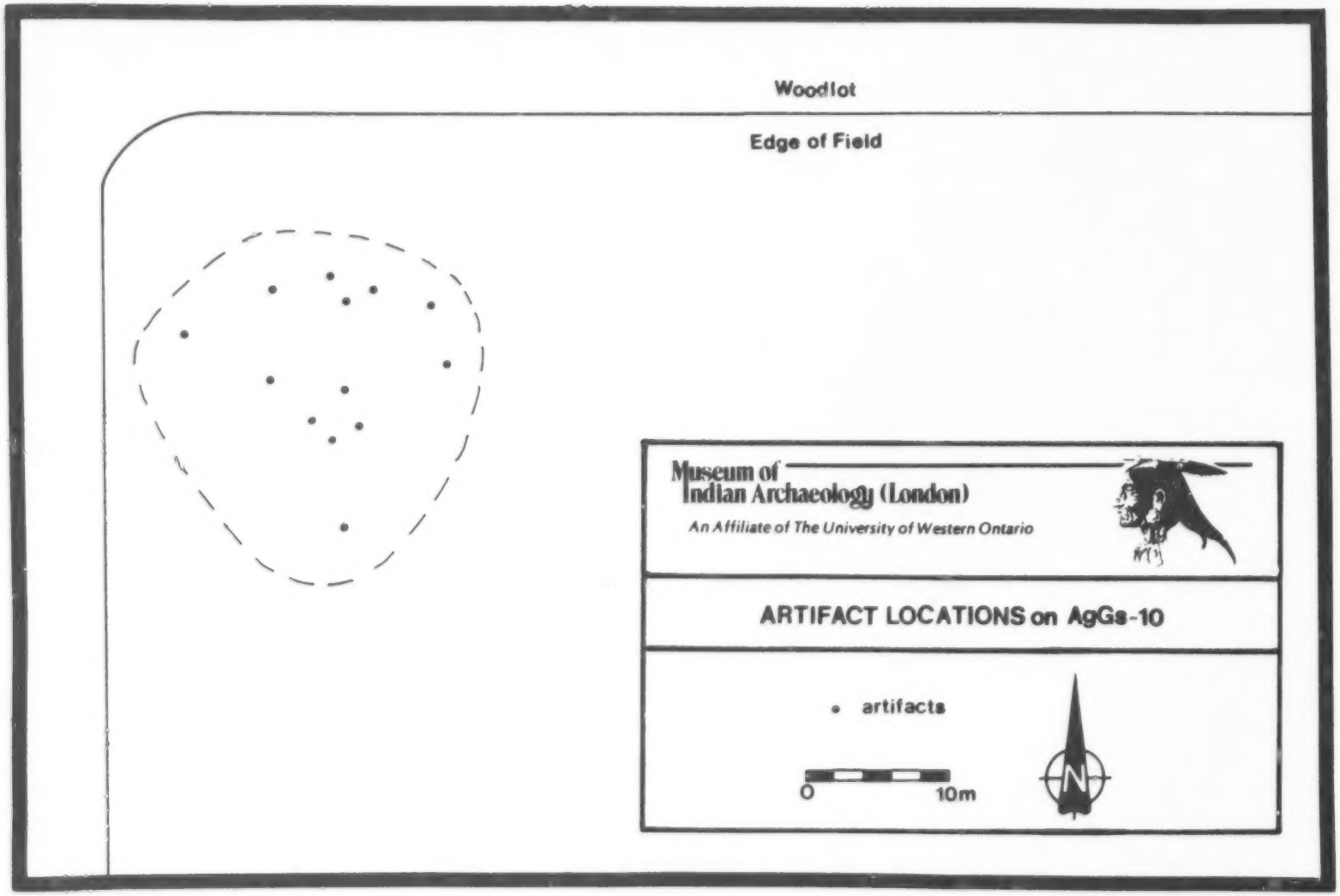
Map E-13: AgGv-42 (LF-3C)



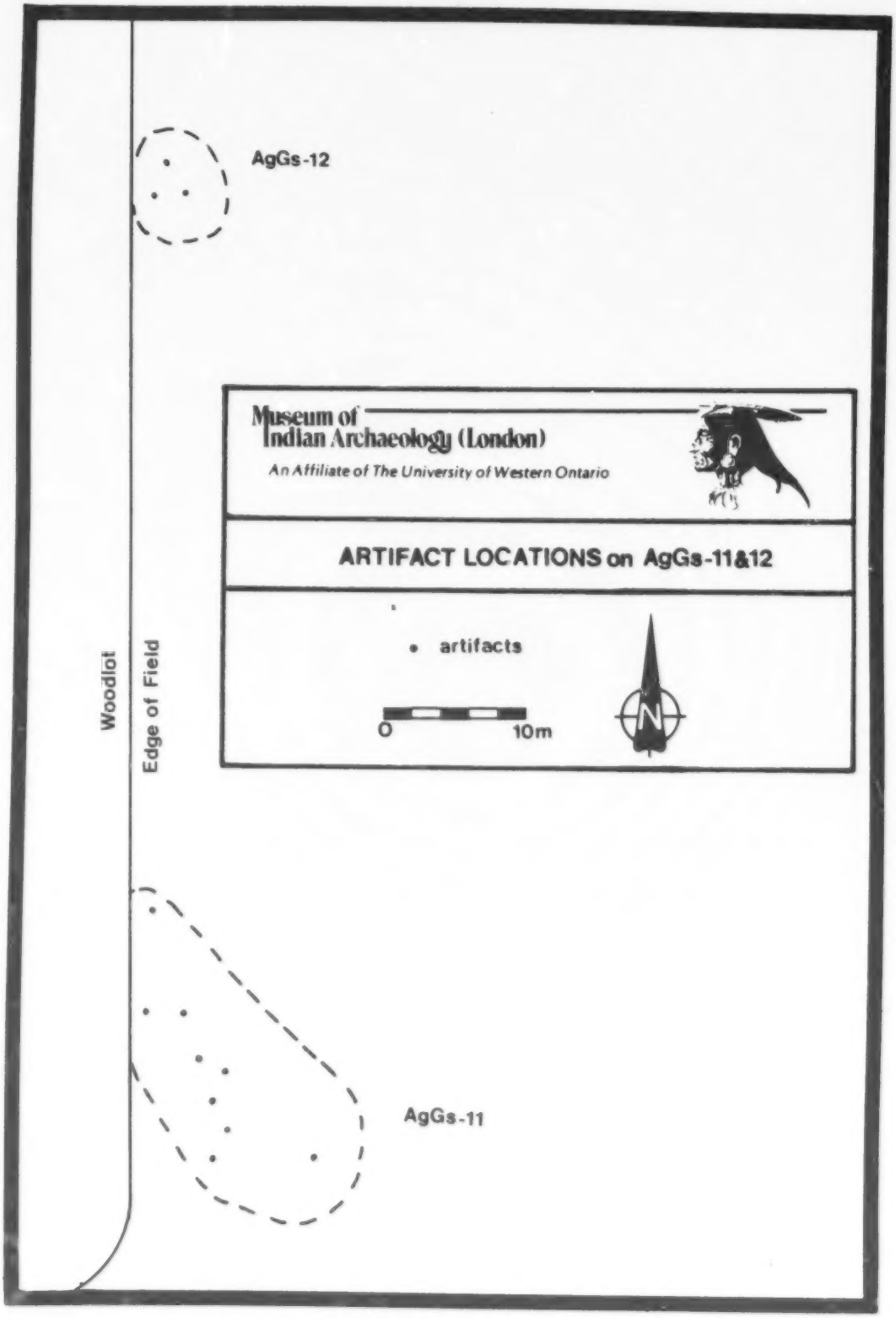
Map E-14: Silverdale Station (Adjacent to LF-9C)



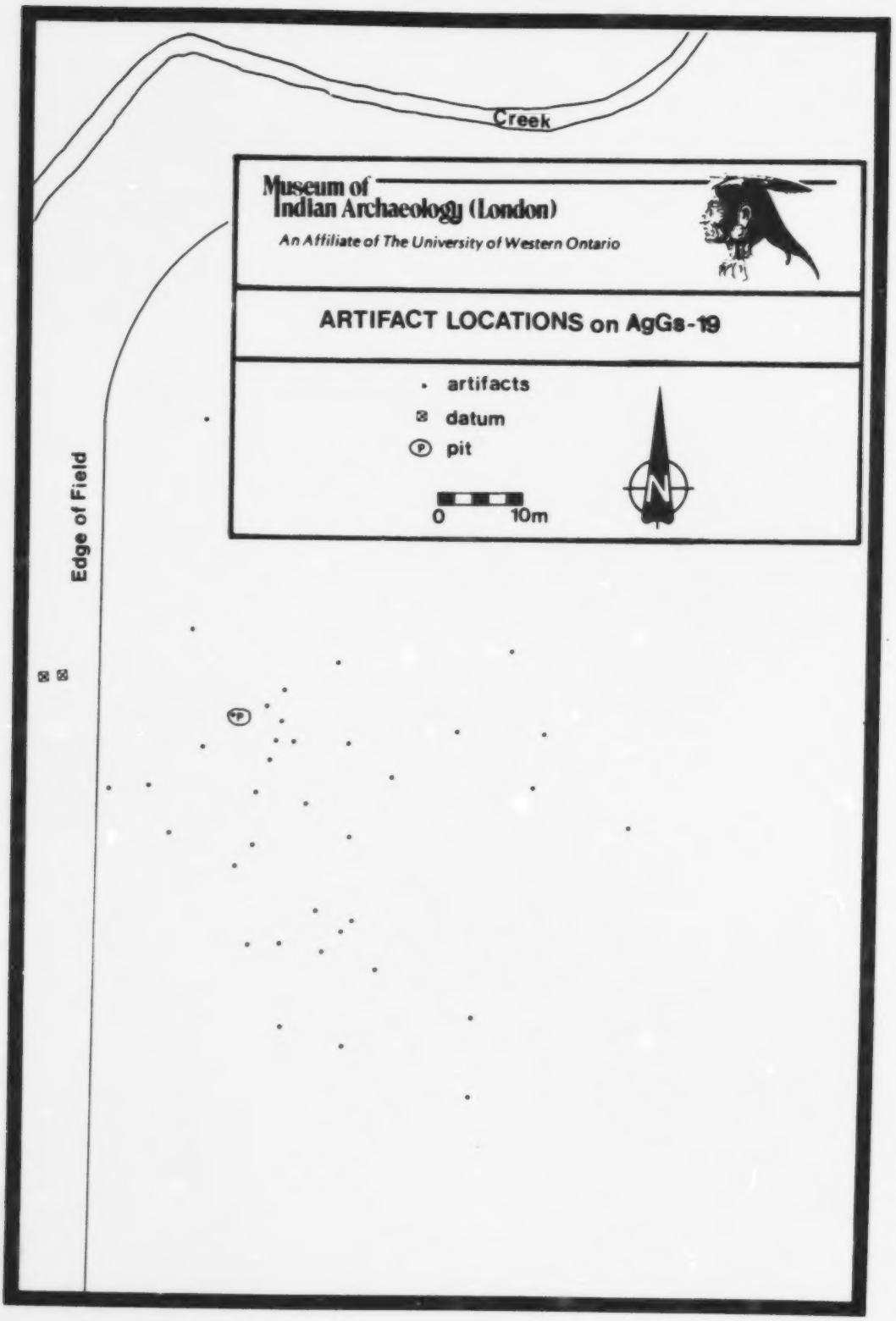
Map E-15: AgGu-25 (LF-9C)



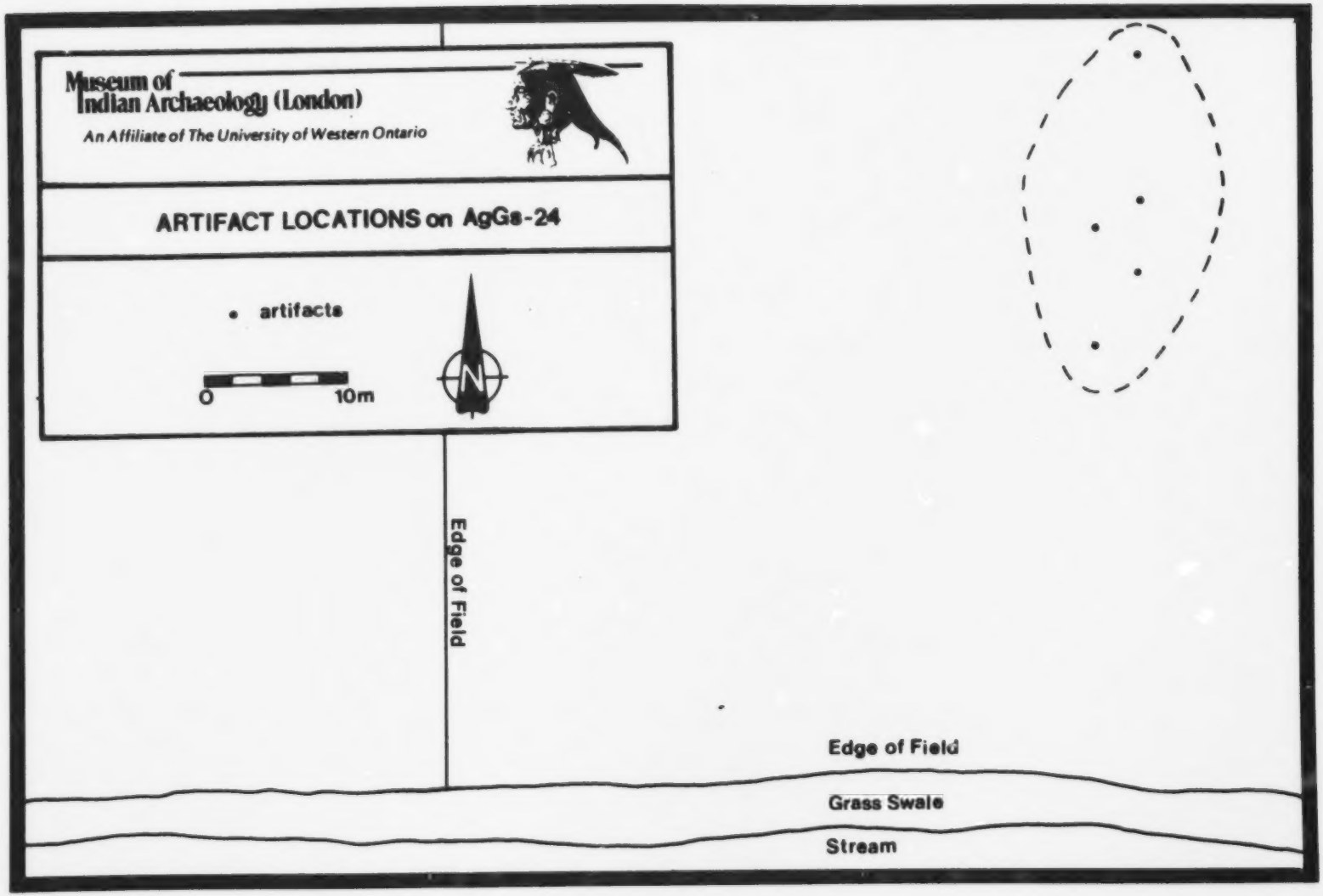
Map E-16: AgGs-10 (LF-1E)



Map E-17: AgGs-11 & 12 (LF-1E)



Map E-18: AgGs-19 (PI-27E)



Map E-19: AgGs-24 (PI-27E)

APPENDIX F:

Photographs of Some of the
Artifacts Recovered

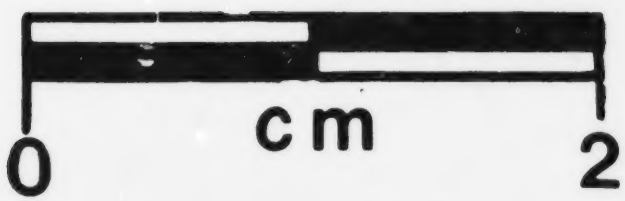
Candidate Site PI-1N

Archaeological Site AiGw-188,

Late Archaic findspot, circa 2500-1000 B.C.

a. AiGw-188:1 Brewerton Corner-Notched type projectile point

a



Candidate Site PI-1N

Archaeological Site AiGw-190,

Camp site of indeterminate age and cultural affiliation.

a. AiGw-190:14 Scraper

b. AiGw-190:15 Scraper

b
a
0 cm 2

Candidate Site PI-13N

Archaeological Site AjGw-48,

Historic Euro-Canadian Farmstead, circa 1850-1900
(Residence of Dr. A. Fox, pre-1876)

a. Transfer-Printed Ware, "Chinese House" motif, blue

b. White Granite Ware, moulded "wheat sheaf" motif

c. Sponged Ware, blue motif

d. Sponged Ware, blue motif

e. Bone button

f. Transfer-Printed Ware, dark grey or light brown motif

g. Glass bottle base fragment, moulded

a
b
c
d
e
f
g
0 1 2

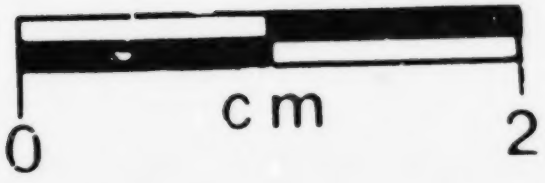
Candidate Site PI-13N

Archaeological Site AjGw-49,

Findspot of indeterminate age and cultural affiliation

a. AjGw-49:1 Biface/scraper fragment

a



Candidate Site LF-3C

Archaeological Site AgGv-2,

Prehistoric Neutral village, circa A.D. 1400-1550, with isolated Archaic period (6000-1000 B.C.) artifacts.

a. AgGv-2:79 Biface

b. AgGv-2:7 Nanticoke Notched type projectile point

c. AgGv-2:81 Brewerton Corner-Notched (2500 B.C.) projectile point

d. AgGv-2:21 Scraper

AgGv-2

0 cm. 4

Candidate Site LF-3C

Archaeological Site AgGv-3,

Findspot of indeterminate age and cultural affiliation.

a. AgGv-3:1 Biface fragment

a

Candidate Site LF-3C

Archaeological Site AgGv-5,

Camp site of indeterminate age and cultural affiliation.

a. AgGv-5:13 Projectile point tip fragment

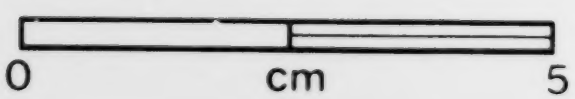
b. AgGv-5:4 Biface fragment

c. AgGv-5:7 Biface

a

b

c



Candidate Site LF-3C

Archaeological Site AgGv-7,

Historic Euro-Canadian Farmstead, circa 1870-1900+
(Residence of J.S. Robins, pre-1876 and Ashton Family, post-1876)

a. White Porcelain fragment
   -"Chimes Semi-Porcelain" and ship stamped on bottom in green

b. Stamped Ware, blue floral motif over moulded floral pattern, scalloped edge

c. Stamped Ware, green floral motif over moulded floral pattern, scalloped edge

d. Banded Ware, dark brown slip bands and brown stamped floral motif on green background

e. Glass bottle neck, lipped, non-threaded

f. Moulded porcelain tea cup handle

a
b
c
d
e
f
0
cm
5

Candidate Site LF-3C

Archaeological Site AgGv-11,

Early Iroquoian village or hamlet, circa A.D. 600-1100, with isolated Archaic period (6000-1000 B.C.) artifacts.

a. AgGv-11:13 Early Archaic (6000 B.C.) Bifurcate Base type projectile point

b. AgGv-11:23 Projectile point tip fragment

c. AgGv-11:40 Biface, possible preform for a Levanna projectile point

d. AgGv-11:19 Levanna type (A.D. 600-1100) projectile point

e. AgGv-11:20 Projectile point midsection

f. AgGv-11:38 Projectile point tip, probably Archaic period

a
b
c
d
e
f
AgGv-11
0
cm.
4

Candidate Site LF-3C

Archaeological Site AgGv-15,

Findspot of indeterminate age and cultural affiliation.

a. AgGv-15:1 Ground stone celt (axe) fragment

a
0
cm
2

Candidate Site LF-3C

Archaeological Site AgGv-16,

Camp site of indeterminate age and cultural affiliation.

a. AgGv-16:3 Utilized flake

0
2
Cm.

Candidate Site LF-3C

Archaeological Site AgGv-18,

Prehistoric Neutral village or hamlet, circa A.D. 1400-1500.

a. AgGv-18:51 Nanticoke Triangular type projectile point

b. AgGv-18:77 Nanticoke Triangular type projectile point

c. AgGv-18:78 Nanticoke Triangular type projectile point

d. AgGv-18:54 Ceramic pipe stem fragment

e. AgGv-18:18 Nanticoke Triangular type projectile point

f. AgGv-18:74 Nanticoke Notched type projectile point

g. AgGv-18:91 Ceramic body sherd

h. AgGv-18:76 Basal fragment, Nanticoke Triangular type projectile point

i. AgGv-18:40 Nanticoke Notched type projectile point

a
b
c
d
e
f
g
h
i
0
cm
2

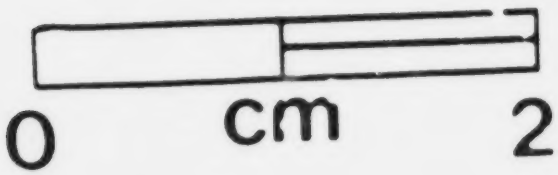
Candidate Site LF-3C

Archaeological Site AgGv-19,

Camp site of indeterminate age and cultural affiliation.

a. AgGv-19:1 Biface fragment

a



Candidate Site LF-3C

Archaeological Site AgGv-22,

Camp site of indeterminate age and cultural affiliation

a. AgGv-22:4 Side Scraper

b. AgGv-22:8 Thumbnail End Scraper

c. AgGv-22:1 Spokeshave Scraper

c
b
a
0 cm 2

Candidate Site LF-3C

Archaeological Site AgGv-24,

Camp site of indeterminate age and cultural affiliation.

a. AgGv-24:3 Biface fragment

b. AgGv-24:2 Utilized flake

c. AgGv-24:11 Utilized flake

d. AgGv-24:4 Scraper

e. AgGv-24:12 Utilized flake

a
b
c
d
e
0
cm
5

Candidate Site LF-3C

Archaeological Site AgGv-26,

Archaic camp, circa 5000-1000 B.C.

a. AgGv-26:6 Utilized flake

b. AgGv-26:3 Utilized flake

c. AgGv-26:1 Scraper

d. AgGv-26:10 Utilized flake

e. AgGv-26:8 Scraper

f. AgGv-26:12 Archaic period biface

a
b
c
d
e
f
0 cm 2

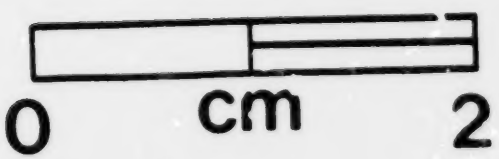
Candidate Site LF-3C

Archaeological Site AgGv-27,

Early Woodland findspot, circa 400-1 B.C.

a. AgGv-27:1 Adena type projectile point

a

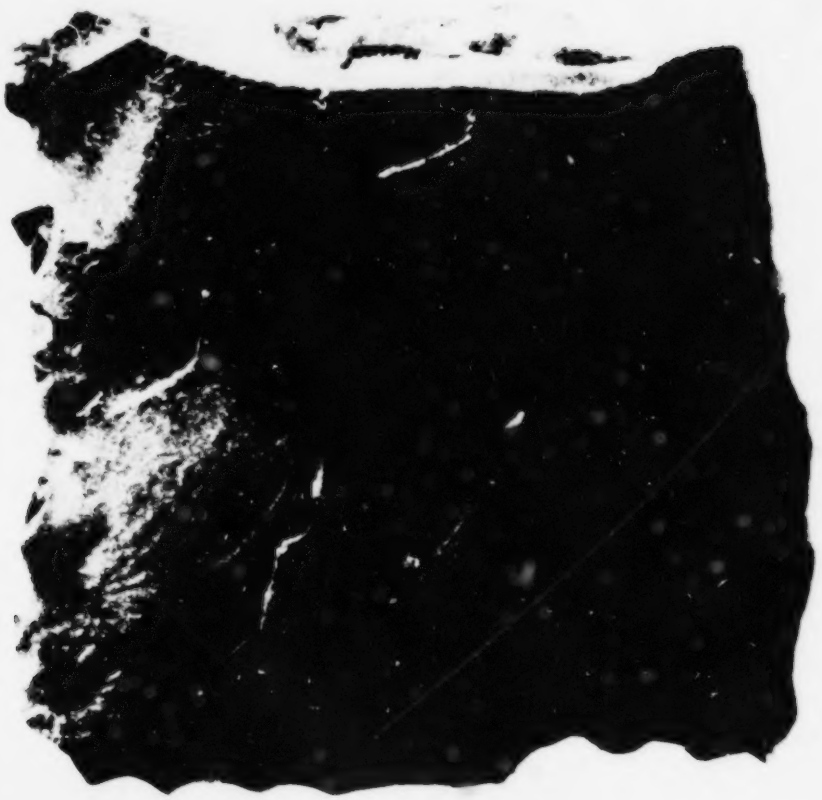


Candidate Site LF-3C

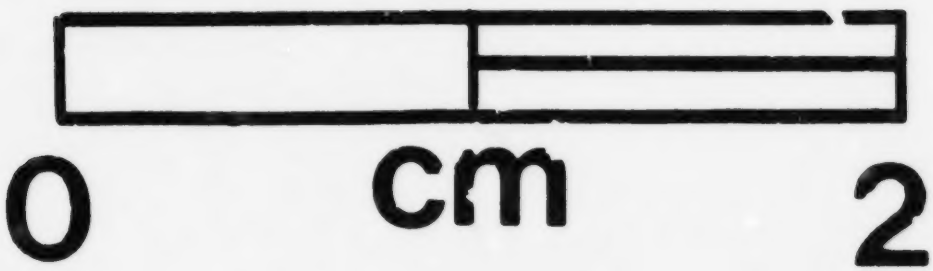
Archaeological Site AgGv-28,

Prehistoric Neutral findspot, circa A.D. 1400-1550.

a. AgGv-28:1 Nanticoke Triangular type projectile point base



a



Candidate Site LF-3C

Archaeological Site AgGv-29,

Late Archaic camp, circa 2500-1000 B.C.

a. AgGv-29:4 Utilized flake

b. AgGv-29:1 Brewerton Corner-Notched type projectile point

a

b

0 Cm. 2

Candidate Site LF-3C

Archaeological Site AgGv-31,

Camp site of indeterminate age and cultural affiliation.

a. AgGv-31:1 Utilized flake

a

0 Cm. 2

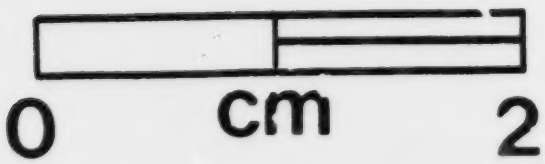
Candidate Site LF-3C

Archaeological Site AgGv-33,

Prehistoric Neutral findspot, circa A.D. 1400-1550.

a. AgGv-33:1 Nanticoke Notched type projectile point, broken, retouched, and utilized as a scraper.

a



Candidate Site LF-3C

Archaeological Site AgGv-35,

Historic Euro-Canadian Farmstead, circa 1820-1900 A.D.
(Log Cabin Residence of E. Vaughan in 1820-1830s;
Occupied by Fred Bartwell after 1876)

a. Plain Creamware tea cup fragment
   -word "Royal" printed on bottom in light green

b. Transfer-Printed Ware, light blue motif

c. Edged Ware, dark blue, unscalloped

d. Plain Creamware ceramic lid

e. Banded Ware, light blue slip bands

a
b
c
d
e
0 1 2

Candidate Site LF-3C

Archaeological Site AgGv-37,

Camp site of indeterminate age and cultural affiliation.

a. AgGv-37:1 Projectile point tip fragment

b. AgGv-37:7 Projectile point tip fragment

b
a
0
cm
2

Candidate Site LF-3C

Archaeological Site AgGv-39,

Late Archaic camp, circa 2500-2000 B.C.

a. AgGv-39:14 Lamoka type projectile point

a
0
cm
2

Candidate Site LF-3C

Archaeological Site AgGv-41,

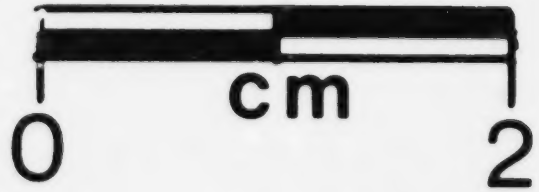
Camp site of indeterminate age and cultural affiliation

a. AgGv-41:5 Biface fragment

b. AgGv-41:8 Biface fragment

a

b



F-25

Candidate Site LF-3C

Archaeological Site AgGv-42,

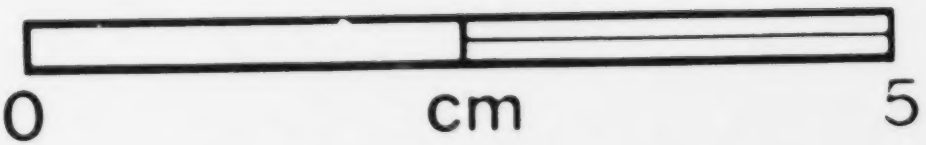
Camp site of indeterminate age and cultural affiliation.

a. AgGv-42:10 Biface fragment

b. AgGv-42:23 Utilized flake

a

b



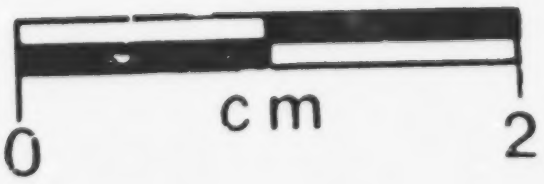
Candidate Site LF-9C

Archaeological Site AgGu-26,

Early Woodland findspot, circa 900-400 B.C.

a. AgGu-26:1 Meadowood cache blade or projectile point preform

a



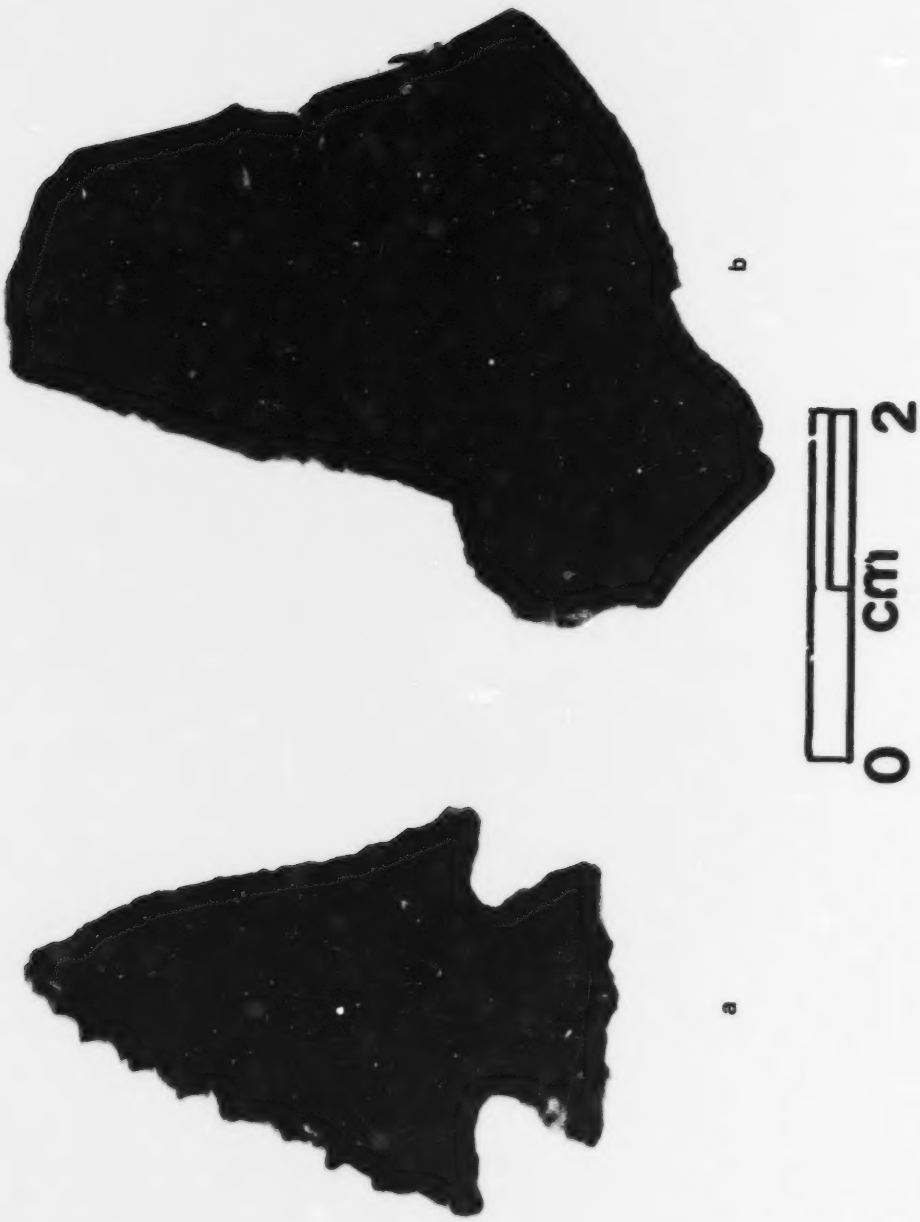
Candidate Site LF-9C

Archaeological Site AgGu-28,

Early Archaic findspot, circa 8000-7500 B.C.

a. AgGu-28:1 Nettling type projectile point (note the serrated edges)

b. AgGu-28:2 Chert flake


b
a
0 cm 2

Candidate Site LF-1E

Archaeological Sites AgGs-9 and AgGs-10,

AgGs-9 Findspot of indeterminate age and cultural affiliation
AgGs-10 Camp site of indeterminate age and cultural affiliation

a. AgGs-9:1 Biface fragment

b. AgGs-10:4 Utilized flake

b

a

Candidate Site LF-1E

Archaeological Site AgGs-29,

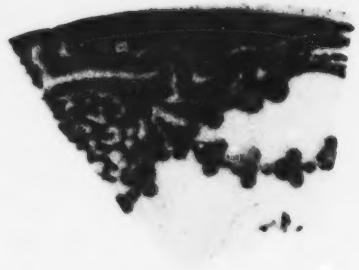
Historic Euro-Canadian Homestead, circa 1850-1900 A.D.
(Residence of C. Everingham, pre-1876)

a. Transfer-Printed Ware, light blue/green motif

b. Transfer-Printed Ware, light blue motif, scalloped edge

c. Stoneware Crockery fragment, salt-glazed

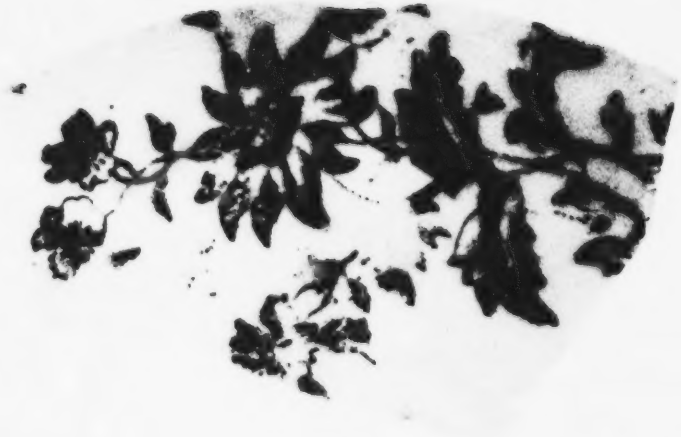
d. Transfer-Printed Ware, green floral motif over moulded floral pattern



a

b

c



d

0 1 2

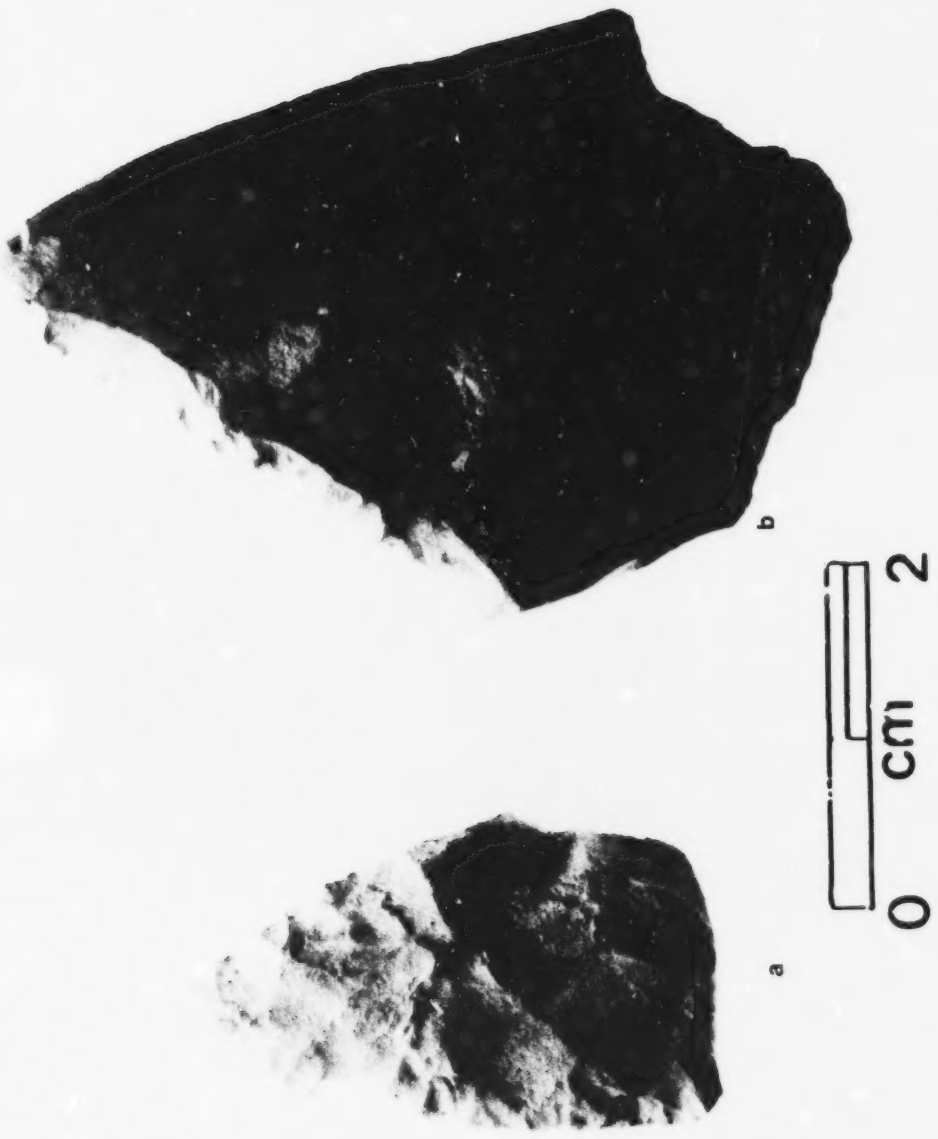
Candidate Site LF-1E

Archaeological Sites AgGs-30 and AgGs-31,

Findspots of indeterminate age and cultural affiliation.

a. AgGs-31:1 Biface or projectile point fragment

b. AgGs-30:1 Scraper


b
a
0 cm 2

Candidate Site PI-27E

Archaeological Sites AgGs-17, AgGs-18, AgGs-19, AgGs-25
on the Candidate Site and AgGs-28
in the Candidate Site Vicinity

a. AgGs-25:1 Biface or projectile point tip fragment (Findspot of indeterminate age and cultural affiliation)

b. AgGs-18:1 Utilized flake (Findspot of indeterminate age and cultural affiliation)

c. AgGs-17:2 Biface fragment (Findspot of indeterminate age and cultural affiliation)

d. AgGs-28:1 Utilized flake (Findspot of indeterminate age and cultural affiliation)

e. AgGs-19:14 Genesee type projectile point fragment (Late Archaic camp site, circa 1900-1400 B.C.)

a
b
c
d
e
0
cm
2

Candidate Site PI-27E

Archaeological Site AgGs-33,

Historic Euro-Canadian Homestead, circa 1840-1900 A.D.
(Residence of T. Wilkins, pre-1876)

a. White clay pipe stem fragment

b. White clay pipe stem fragment

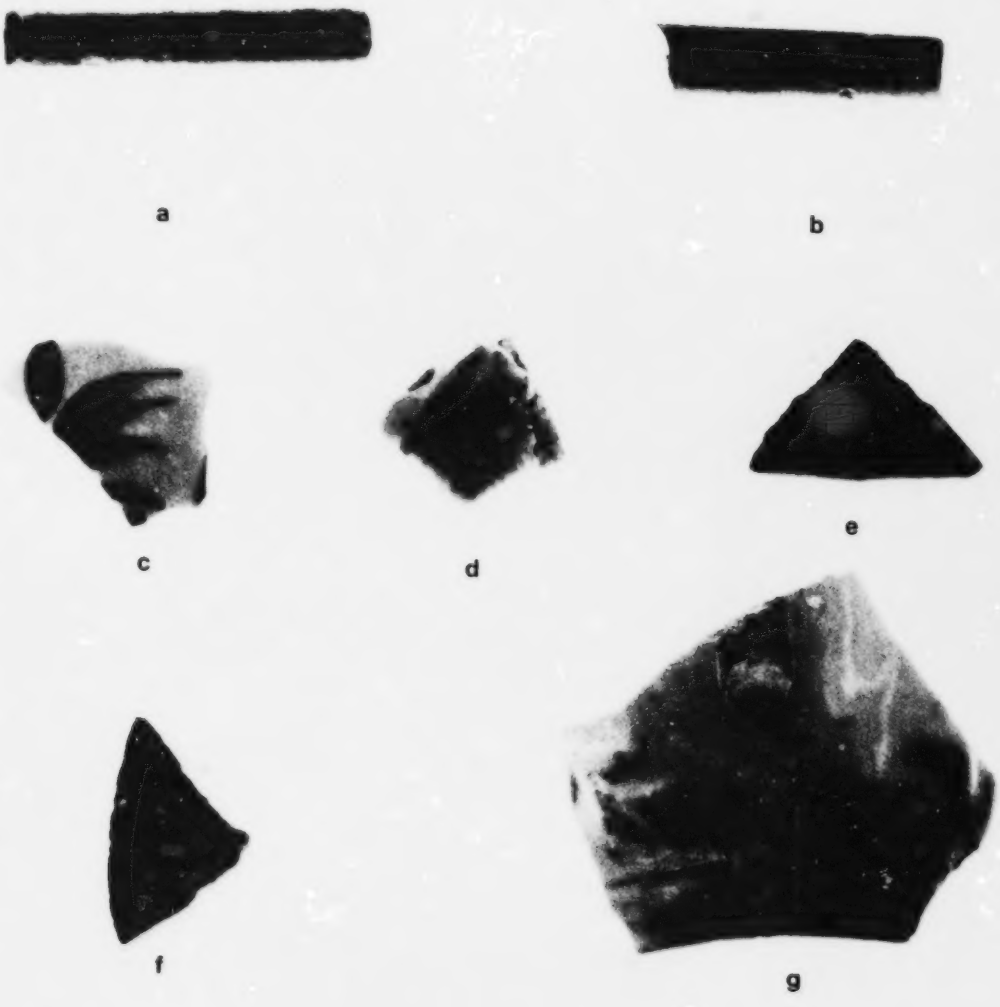
c. Blue Painted Ware, blue floral motif

d. Creamware plate fragment, stamped "York..." in brown

e. Polychrome Painted Ware, dark green leaves, brown stem

f. Blue Painted Ware, "Chinese House" motif

g. White Granite Ware, moulded leaf motif


a
b
c
d
e
f
g
0 1 2

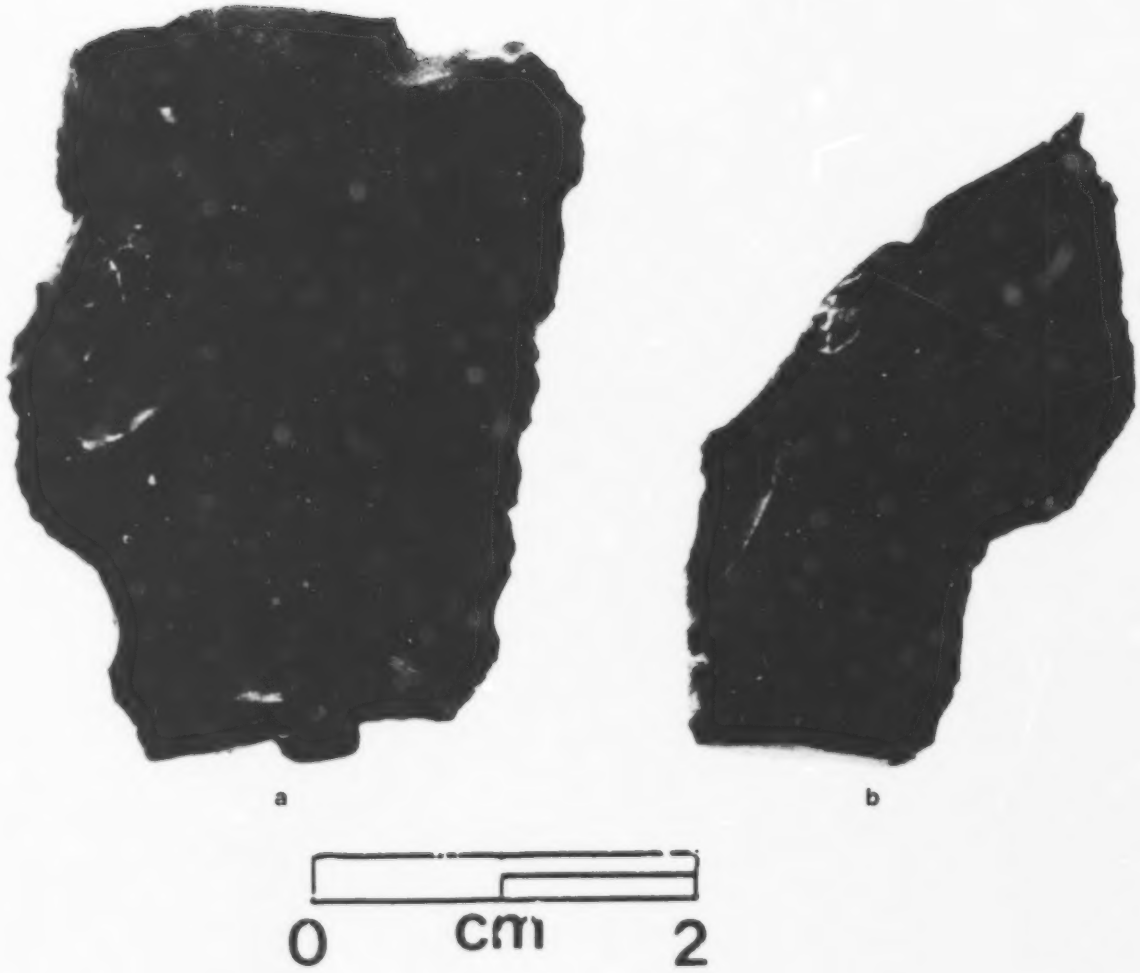
Candidate Site PI-27E

Archaeological Site AgGs-34,

Early Woodland findspot, circa 400 B.C.

a. AgGs-34:2 Adena type projectile point fragment

b. AgGs-34:1 Adena type projectile point fragment


a
b
0
cm
2

Candidate Site PI-27E (Vicinity)

Archaeological Site AgGs-14 (Plate 1 of 3),

Late Archaic camp site, circa 2500-2000 B.C.

a. AgGs-14:27 Brewerton Side-Notched type projectile point fragment

b. AgGs-14:93 Corner-Notched projectile point fragment

c. AgGs-14:29 Lamoka type projectile point

d. AgGs-14:28 Lamoka type projectile point

e. AgGs-14:16 Lamoka type projectile point

f. AgGs-14:118 Lamoka type projectile point

g. AgGs-14:80 Lamoka type projectile point

h. AgGs-14:121 Biface fragment

i. AgGs-14:38 Biface

j. AgGs-14:37 Biface fragment

a
b
c
d
e
f
g
h
i
j
0
cm
5

Candidate Site PI-27E (Vicinity)

Archaeological Site AgGs-14 (Plate 2 of 3),

Late Archaic camp site, circa 2500-2000 B.C.

a. AgGs-14:54 Biface fragment

b. AgGs-14:122 Biface fragment

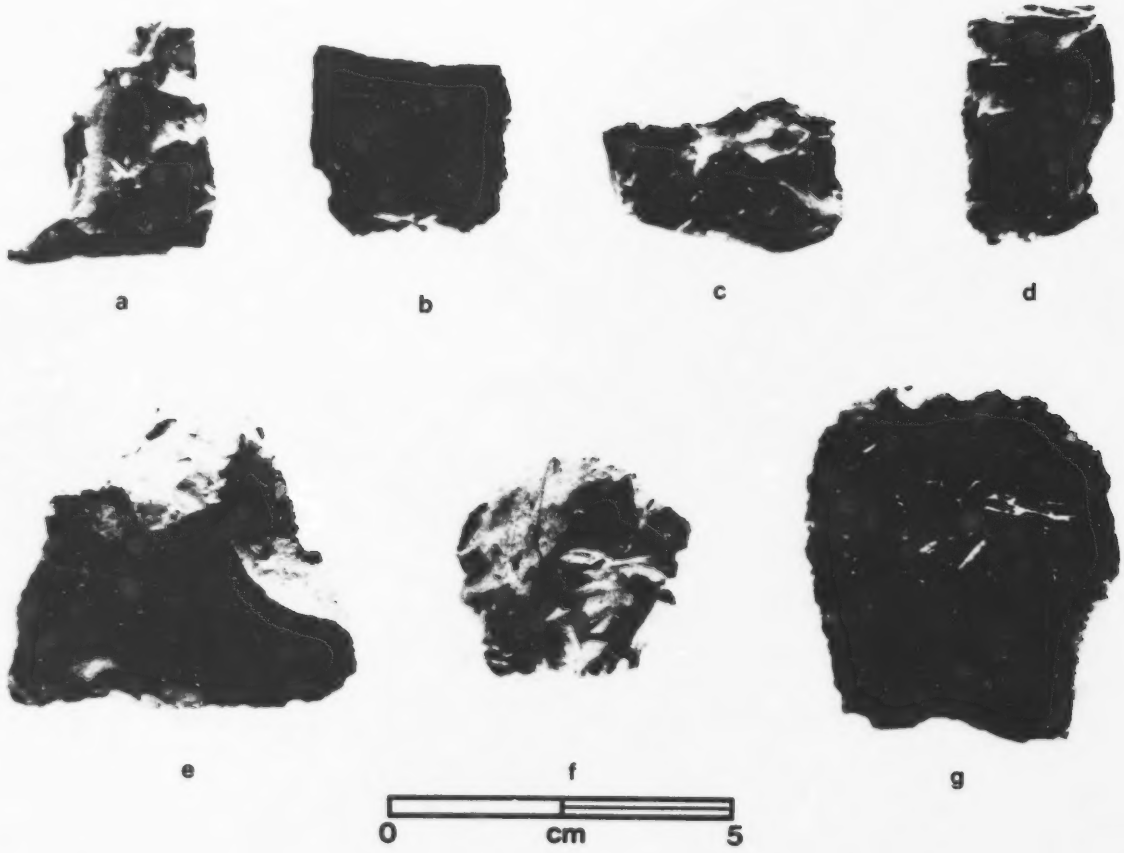
c. AgGs-14:68 Biface fragment

d. AgGs-14:12 Biface

e. AgGs-14:110 Biface fragment

f. AgGs-14:119 Biface fragment

g. AgGs-14:104 Biface fragment


a
b
c
d
e
f
g
0
cm
5

Candidate Site PI-27E (Vicinity)

Archaeological Site AgGs-14 (Plate 3 of 3),

Late Archaic camp site, circa 2500-2000 B.C.

a. AgGs-14:90 Celt (axe or adze) fragment

b. AgGs-14:47 Sandstone abrader fragment

a

b

Candidate Site PI-27E (Vicinity)

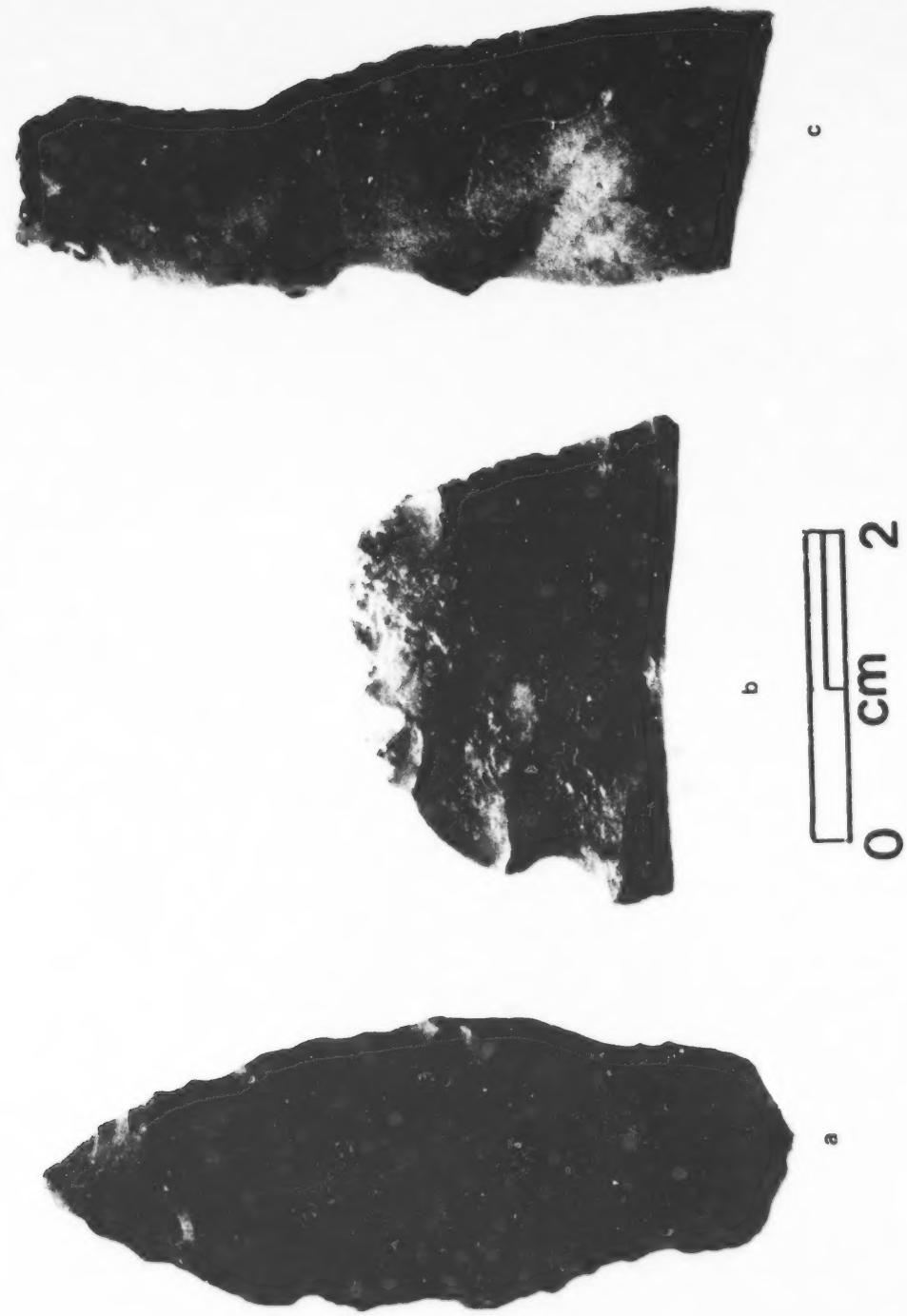
Archaeological Site AgGs-20,

Late Archaic camp site, circa 2500-2000 B.C.

a. AgGs-20:5 Lamoka type projectile point

b. AgGs-20:1 Projectile point fragment; unknown type

c. AgGs-20:2 Utilized flake


c
b
0 cm 2
a

APPENDIX G:

Factors and Indicator Sheets

OWMC PHASE 4A - FACTORS FOR SITE SELECTION

LEAD CONSULTANT: Gartner Lee Associates Ltd.
(Museum of Indian Archaeology, London)

FACTOR GROUPING: ENVIRONMENTAL IMPACTS: Community and Regional	FACTOR: Archaeological Resources

FACILITY COMPONENTS AFFECTED: All

FACTOR APPLIED FOR FOLLOWING OPTIONS:

Access Roads	Rail Access	Boundary Definition
		xxxxxxxxxxxxxxxxxx
Location of Physical/Chemical Treatment Plant	**Siting Option Comparison**	**Other**
	xxxxxxxxxxxxxxxxxxxxx	

DEFINITION OF FACTOR: Archaeological resources include known native archaeological sites and known Euro-Canadian historic sites (non-standing, pre-1878) discovered by on-site investigations. This factor is considered on-site only.

Each archaeological resource documented was assessed in terms of its significance for providing knowledge on the prehistory/history of the area, and resources designated as significant were considered in the refinement of candidate site boundaries and in the comparison of siting options.

RATIONALE/SIGNIFICANCE OF FACTOR: Native archaeological sites and non-standing, pre-A.D. 1878 historic sites of Provincial significance could be disrupted or displaced by an OWMC facility. This factor encompasses the identification of any resources and methods for their protection.

INTERPRETATION/METHODOLOGY: Known archaeological resources on each candidate site and in the vicinity of each candidate site were documented in Phase 3B. In Phase 4A, known archaeological resources were investigated, all areas on the candidate site with the ground surface exposed were subjected to an archaeological survey, and local residents on and in the vicinity of the candidate site were interviewed. Additional archival research was also carried out.

OWMC PHASE 4A - FACTORS FOR SITE SELECTION

FACTOR GROUPING: ENVIRONMENTAL IMPACTS: Community and Regional	FACTOR: Archaeological Resources

INDICATORS: Number of significant archaeological
( ) resources impacted

CONSULTANT: Museum of Indian Archaeology

DEFINITION:

Sub-Indicator: Significant native archaeological site
Any area revealing evidence of use by native peoples between 9000 B.C. and the present and assessed as being significant.

Sub-Indicator: Significant non-standing historic site
Any area revealing evidence of use by Euro-Canadians between A.D. 1600 and A.D. 1876-1878 but not standing today and assessed as being significant.

RATIONALE/SIGNIFICANCE: See Rationale/Significance of Factor.

SOURCES OF INFORMATION:
-Phase 3B Technical Report
-on-site fieldwork in Phase 4A
-responses to walk and talk questionnaires
-interviews with local people
-archival research

INPUTS FROM OTHER CONSULTANTS: None

STUDY AREA: Site

OWMC PHASE 4A - FACTORS FOR SITE SELECTION	
FACTOR GROUPING: ENVIRONMENTAL IMPACTS: Community and Regional	FACTOR: Archaeological Resources

COMMENTS/ASSUMPTIONS/LIMITATIONS:

On-site archaeological fieldwork in Phase 4A was limited to areas with the ground surface exposed (ploughed/cultivated fields, or fields planted in "open" crops where the ground surface was visible between rows of crops).

The locations of archaeological sites must remain confidential, based on a heritage conservation policy of the Ministry of Citizenship and Culture. These locations can be revealed to OWMC and its consultants for planning purposes, but they cannot be revealed to the public.

Fieldwork during Phase 4A was limited to the candidate site study area, although archaeological and historic sites located in the vicinity of the candidate site were documented through the Walk and Talk questionnaires and interviews with local people.

It was recommended that archaeological resources identified as being significant will require avoidance or mitigation during Phase 4B, if they will be impacted by facilities development and subject to confirmation of their significance during future research and fieldwork.

APPENDIX H:

Ministry of Citizenship and Culture
Archaeological Sites Data Base
Access Guidelines

Archaeological Sites Data Base
Access Guidelines

General

Requests for archaeological data are submitted, in writing, to either the appropriate Regional Archaeologist or to the Data Coordinator in Toronto. The request should include a description of the area or focus of study, the name of the researcher or researchers, and, where applicable, the name of the proponent of and status of the study, or the name of the researcher's supervisor of studies. The reasons for the request, and the intended use of the information, should be made clear in the letter. An indication of when the information is required is also helpful.

Requests are examined on an individual case basis, and access to data is subject to ministry discretion. Access to certain types of information is also subject to author's permission.

Information is released by ministry staff if it is in the interest of heritage conservation to do so. Precise site location is released with the suggestion that, in the interest of heritage conservation, this information be neither published, nor made available to the general public. Certain types of information are withheld (ie. precise site location) if, in the opinion of ministry staff, the release of that information would unduly endanger an archaeological resource.

Access to specific types of information

1/ Archaeological Site Records, submitted pursuant to 65(2), Ontario Heritage Act

   a/ Released at the discretion of ministry staff.

   b/ May be subject to specific guidelines, in cases where a researcher has a specific concern about a site, has discussed his/her concern with ministry staff, and has reached an agreement with the ministry concerning access.

2/ Archaeological Licence Reports, submitted pursuant to 65(1), Ontario Heritage Act

   a/ Released subject to author's permission , and

   b/ at the discretion of ministry staff.

3/ Archaeological Licence Reports, submitted pursuant to 65(1), Ontario Heritage Act, necessity of author's permission waived by author

   a/ Released at the discretion of ministry staff.

4/ Reports submitted to the Ministry, not under licence

   a/ Released at the discretion of ministry staff.